THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—15TH YEAR. SYDNEY, SATURDAY, APRIL 14, 1928. No. 15.

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PUERPERAL SEPSIS: AN INVESTIGATION ABROAD ON THE PREVENTION OF MATERNAL MORTALITY.[1]

By I. V. Yoffa, M.B., D.G.O. (Dublin), L.M. (Rotunda).

I wish to thank this distinguished Society for permitting me to give this address before them this evening.

The almost stationary character of our high maternal mortality rate forces upon us the realization that there is much to be done. Is further improvement possible or not? We can bury our heads in the sands of indifference, satisfied that further progress is impossible and the present wastage of maternal lives inevitable or we can frankly admit that much could be prevented.

The reduction of our maternal mortality is dependent not upon one factor, but upon many and not the least among these is the adequate training of the student and midwife. The period of training in practical obstetrics should be lengthened and the curriculum should be revised and reconstructed.

Prevention of maternal mortality in connexion with puerperal sepsis cannot be discussed apart from schemes dealing with midwifery; it must form part of the organization set up to deal with the expectant and lying-in mother. Our statistics indicate a mortality that is truly appalling, especially when one reflects that it falls upon women in the prime of life and usefulness and is the result in many cases of preventible disease. Every year puerperal sepsis relentlessly claims its toll of maternal lives; yet the disastrous effects of puerperal sepsis are not represented by the mortality alone, for hundreds of invalid mothers owe their impaired health to the milder grades of sepsis from abortion and childbirth, as our gynæcological departments can testify.

No stronger evidence could be offered than is afforded by the foregoing facts of the need for improvement in our maternity services. A study of this paper will make plain to all that if Victoria desires to deal adequately with this problem, we must be vigilant from the outset, we must build on broad and sound foundations. The first business of any endeavour to reduce maternal mortality is to explore the position, to sweep away all subterfuges and to reveal the true facts without any attempt at prevarication. The goal is to bring our maternal mortality down to the level of the country with the lowest maternal mortality rate. What is possible in one country should be possible in all. In this investigation I have selected from a wide range of material, gathered abroad, that which seems to me the most valuable, discussing the whole position and the present needs and including relative comparisons with the conditions of training of the student and midwife. I shall herewith present it to you as concisely as possible.

[1] Read at a meeting of the Section of Obstetrics and Gynæcology of the Victorian Branch of the British Medical Association on February 29, 1928.

The United Kingdom.

Training of Medical Students.

Obstetrics and gynæcology have been placed on the same standing as medicine and surgery in the training of medical students in the United Kingdom. Six months are allotted to clinical obstetrics and gynæcology. Three months whole time is devoted to practical work in a maternity hospital.

Saint Thomas's Hospital Scheme.

At Saint Thomas's Hospital sixteen students are in residence for three months. Eight students are on intern duty for six weeks, then they follow on for six weeks extern duty.

During intern duty each student performs ten deliveries. The first two deliveries are conducted under the supervision of the resident medical officer. The routine history is taken by the student. The resident medical officer checks the students' histories each week, thus keeping the student up to the mark. These histories are kept as hospital records. The student takes a complete history of every patient admitted and does a complete general examination as in a medical case. Abdominal palpation and vaginal examination are carried out under the supervision of the resident medical officer. Blood pressure estimation and urine examination are carried out by the student.

During the first stage the student sees the patient every two hours and records the fœtal heart's action and the character of the pains. During the second stage the student sees the patient every half hour and records are taken as in the first stage. During the third stage the appearances of the placenta and membranes are noted.

The history of the labour is written and notes of the baby's condition are recorded.

The student makes daily visits to the after-treatment ward and records the progress notes of mother and baby.

The honorary visits the wards on alternate days and conducts regular bedside clinics as in medical or surgical clinics. The student reads out the history, diagnosis *et cetera* and this is followed by interrogation.

In the extern practice of the hospital the social worker (lady almoner) reports on home conditions. *Primiparæ* are not pressed to come into hospital for confinement if home conditions are suitable. Certain surgical requirements and home conditions are regarded as necessary if the patient is to be delivered at home: (i) Clean bed linen and body linen for the mother (and an adequate supply of baby clothes). (ii) A supply of sterilized materials for use during delivery; outfits are supplied free of cost by local health authorities to patients who cannot pay for them. (iii) The patient should have a room to herself. Given the simple home conditions and surgical requirements enumerated, a woman may safely have her confinement at home.

Saint Thomas's encourages a large extern department. District work extends for a three-

mile radius from the hospital. Many babies are born before the arrival of the attendant (two hundred in eight hundred deliveries annually). Histories are taken and kept as records. The student averages ten cases on extern duty. The patient is visited in the puerperium by the student, every day for the first four days, then alternate days to tenth day. The resident medical officer for the extern department applies forceps, attends breech deliveries and performs versions. The student calls the resident medical officer when he is in difficulties. Students are on call for abnormal deliveries in the labour ward.

The Liverpool Scheme.

At Liverpool the extern scheme is superior to that of Saint Thomas's. The extern department is divided into four districts, with a home in each district. A sister tutor and two to four pupil midwives from the hospital reside in each home. Thus the babies born before the arrival of the attendant are reduced to a minimum. The sister and one pupil midwife go to every confinement. The student's bag is taken by the sister. The sister calls the student by telephone when the patient is entering the second stage. The student and pupil midwife alternate the confinements. (Some hospitals in England have separate districts for student and pupil midwife.) The student averages ten cases on extern duty.

Each district home is a centre for ante-natal treatment. Patients who are destined for the extern department, are examined in the early months and again at the thirty-sixth week in the hospital ante-natal clinic. The rest of the ante-natal care is carried out by the sister tutor, the expectant mother visiting the home in her district. Where a patient is unable to attend the home for ante-natal care, a senior pupil midwife visits the patient.

All case records are gone through each week in the homes by the sister tutors and any patients who have neglected to attend the home clinic, are visited by the pupil midwives. A sample of urine is collected and examined and the blood pressure is estimated. Patients are warned to attend regularly.

The Edinburgh Scheme.

At Edinburgh class examinations are held and a "D.P." or "duly performed" certificate is given. After a batch of students have completed their term in the maternity hospital, an examination is held, oral and clinical. If a student fails to satisfy the examiners, he must repeat the course in the maternity hospital. Thus the students are obliged to study during their attendance in the maternity hospital.

Ante-Natal Clinics.

Liverpool.

An hour before the honorary is due to arrive at the ante-natal clinic in Liverpool a student takes down the general notes, examines the urine, estimates the blood pressure and performs a general examination, including abdominal palpation, on all new patients. This scheme dispenses with a second clinical assistant, but the object of Professor Blair Bell is to train highly efficient students.

Leeds.

At Leeds unmarried mothers are in the care of a lady doctor (resident medical officer of the hospital). She carries out all ante-natal care in their hostel.

In the majority of the maternity hospitals in England a special day is set apart for unmarried mothers to attend the ante-natal clinics. This avoids their shame being broadcast by the married mothers. The mixing of unmarried and married mothers tends to discourage the unmarried mothers from attending the ante-natal clinics. (In maternity hospitals a small ward is set apart for unmarried mothers for after-treatment.)

Midwives.

Trained nurses who wish to qualify as midwives undergo a six months' course; the fees are £35. Untrained nurses undergo a twelve months' course and pay fees amounting to £65. Obstetric teachers are advocating a three-year course for all pupil midwives, similar to that in Holland and Sweden. The stumbling block is the question of fees. Training schools for midwives only, such as York Road and East-End Lying-in Hospitals, are credited with training the best midwives. The midwives hospitals have their own district homes for extern experience for the pupil midwives.

Post-certificate School.

At a district home of York Road School for Midwives refresher courses of one or two months' duration go on throughout the year. The midwife doing the course resides in the home. She undergoes a complete revision of training in clinical midwifery and her methods of practice are performed under the eye and example of teachers (sister tutors) with high ideals of service and in touch with modern developments. The midwife also attends York Road Hospital for bedside clinics and demonstrations. Lectures on *ophthalmia neonatorum* are held at an eye hospital. Midwives are encouraged to work in partnership, so that they can take time off to do refresher courses.

Special courses for the certificate of Teacher of Midwifery are held. These courses enable midwives to qualify as sister tutors, who play an important part in keeping up a high standard of midwifery.

Inspectors of Midwives.

London has four lady doctors attached to the Public Health Department. The authorities are convinced that lady doctors make the best inspectors of midwives, for they can give expert advice to midwives in ante-natal care *et cetera*.

Maternal Welfare, Ante-Natal Clinics.

I would like to warn the hospital authorities that the establishment of maternal welfare ante-

natal centres, will cause a rapid reduction in the size of their clinics. Let us take Middlesex Hospital for an example. The attendance at the ante-natal clinic has been so reduced that there is a shortage of material for instructional purposes to students. Other maternity hospitals are now trying to encourage patients to come to their ante-natal clinics, some even go to the extent of garden parties. The staff at welfare clinics are kindness itself to the expectant mothers. Morning tea is provided. Their children are cared for by voluntary helpers, whilst the mother is waiting to see the doctor. The waiting-room is bright and in winter the patients sit around the fireplace. Chairs replace the hard forms of a hospital out-patient department. The mothers receive a series of lectures on mothercraft by a special lady teacher. The mothers are not kept waiting.

These ante-natal clinics are run by local practitioners who are paid two guineas per session of two hours. If the medical practitioner does not come on time, his clinic diminishes in numbers and he knows that next year he will not be reappointed.

Facilities for Highly Skilled Ante-Natal Advice.

In order that the benefit of the arrangements should be known to all doctors and midwives practising in the County of Middlesex, the following letter is circulated to medical practitioners and midwives:

Dear Sir/Madam,

The Middlesex County Council has established a Central Ante-natal Clinic for consultation purposes, the services of which are available free of charge to any expectant mother residing in the county. A session is held once a month at the Middlesex Guildhall, Westminster, where Dr. John S. Fairbairn, F.R.C.S., F.R.C.P., Obstetric Physician to St. Thomas's Hospital, examines each case attending, and his findings and opinions are communicated to the doctor or midwife, who has been engaged to attend at the confinement. Medical practitioners or midwives wishing to avail themselves of these facilities should refer cases in the first instance to the local Maternity and Child Welfare Centre, where an appointment for the patient to attend the Central Ante-natal Clinics will be made. Further attendance of a patient at the local Maternity and Child Welfare Centre will not be expected unless the patient and private doctor or midwife so desire. Arrangements also have been made for the admission of cases of especial difficulty to the wards of St. Thomas's Hospital for observation and further examination by Dr. Fairbairn, if he considers this course advisable.

The date and time of attendance at the Central Ante-natal Clinic will be notified to the doctor or midwife concerned, in order that he or she may have the opportunity of being present at Dr. Fairbairn's examination. In the event of this proving inconvenient or impracticable, a short note of the reason for desiring a specialist's opinion on the case should be addressed to me at this office.

If a patient is suffering from albuminuria, this fact should be notified to the local Welfare Centre at the time the patient visits to ask for an appointment, in order that the arrangements may be made for the "Urea Concentration Test" to be carried out before the date of examination by Dr. Fairbairn.

The use of the clinic is intended, primarily, for cases not in a position to pay for private consultation with an obstetrical specialist, but presenting unusual symptoms during pregnancy, or in which difficult labour may be anticipated.

The importance of ante-natal care and the value of the early recognition of abnormalities as factors in the reduction of maternal mortality and morbidity are becoming increasingly apparent, and it is hoped, that every advantage will be taken of the facilities provided by the County Council.

J. Tate,
County Medical Officer.

When a midwife's patient is advised by the welfare clinic to have her confinement in hospital owing to difficult labour being anticipated or complicated by severe toxæmia, the midwife is compensated by the Health Department—she receives half her average fee. Thus independent midwives are encouraged to send their patients to the ante-natal clinics.

But in spite of this financial inducement many midwives carry out complete ante-natal care. The untrained nurse midwife with twelve months' training in midwifery knows her limitations and is only too eager to receive advice. The trained nurse, with six months' training in midwifery, is inclined to exaggerate her own importance, more especially if she has been trained where students are training, for in a students' clinic she hears lectures which are well above her head. Once graduated, she firmly believes that she is "a doctor in a limited sphere." This type of midwife does complete ante-natal care.

Blood Transfusion Service.

The London Blood Transfusion Service of Voluntary Donors under the auspices of the British Red Cross Society gave service to maternity patients in the broad sense for six months in 1927. The patients suffered from abortion, *placenta prævia*, puerperal sepsis and *post partum* hæmorrhage. Forty-five out of a total of 745 transfusions (500 donors) were given.

The performance of a blood transfusion postulates the presence of at least one willing and suitable blood donor and in hospital practice the provision of this important individual is too often left to Providence, a source of supply which is notoriously uncertain in its operations. This prevailing uncertainty as to how or where to obtain a blood donor often results in the postponement of the decision to perform transfusion, until the patient has passed from the category of hopeful to that of hopeless prognosis and the operation is in the end forestalled by death.

The ideal is centralization, for a hospital service might have about fifty donors without a Group I or III person among them and on the other hand it might have a plethora of Group II or Group IV individuals. A donor of the same group is better for the patient than a universal donor. London's service functions over a radius of sixty miles. Centres are being developed all over England. The expenses of travelling *et cetera* are borne by a fund raised by the service. No fees or charges are made to hospitals or patients. All donors have had a

Wassermann test applied to their blood and have had their blood grouped. Services of voluntary donors are available to all hospitals—private and public—and to patients in their own homes. The donors range from a duchess to a housemaid, girl guides, rovers, Young Men's Christian Association members.

From the preventive aspect these donors refrain from temptations, so that their blood will remain pure for service.

Birth Control (Contraception).

Contraception is a difficult subject to deal with, touching as it does questions of morality and the birth rate of the country; but its influence on the incidence of illegal abortions and puerperal sepsis must be taken into consideration, as one of the factors that is carried out abroad, bearing on the problem of prevention of maternal mortality. The criticisms of contraception can be reduced to the one heading of not wanting to give complete freedom to the community in the matter of sex relations, because of the risk of abuse. Opinions, both medical and lay, differ widely on the mother's welfare. There can be no doubt that the practice of abortion is very largely resorted to by certain sections of the population.

Whatever objections may be urged against contraceptive methods on religious, ethical or social grounds, none of them contravenes the laws of the land except actual attempts at abortion or the deliberate destruction of a potentially living infant. The number of intentional abortions would become insignificant, if proper methods of contraception were within the reach of all. There is no doubt that such knowledge would mitigate the evil.[1] As the means employed in the birth control clinics in England are of a very simple and efficacious character, it can be employed by the poor who most frequently have resort to self induction by a crochet, knitting needle *et cetera* or who obtain the services of a "Sairey Gamp." The rich have the services of a doctor for the induction of an illegal abortion, so they enjoy comparative immunity from the dire results of puerperal sepsis.

Complete abstinence after marriage, while it is obviously and from the ethical point of view the ideal procedure, when it is desired that no more children are wanted, is impracticable to the majority of people. In the close relationship of married life the effects of continued abstinence may be grave for persons of certain temperaments. Strictly speaking there is not any "safe" period, though the chances of conception are materially less from about the eighteenth day after the first day of the preceding period until the end of the cycle. The use of condoms is objectionable for various reasons and at times not effective, while *"coitus interruptus"* is responsible for a good deal of neurasthenia in women and men. The cervical cap, if properly applied, has the effect of damming up the natural discharges from the uterus and causing chronic inflammation.

Birth control is a necessity on medical grounds and an expedient on economic grounds. It is essentially an effort for the prevention of evils, rather than for their cure.[1]

Often a pregnant mother comes to a clinic thinking that birth control implies termination of pregnancy; she is advised to carry on with her pregnancy (ladies of the committee visit her home and try to alleviate any financial difficulties) and after the confinement to return to the clinic, where she is instructed in the use of the occlusive vaginal pessary. After several years' rest, the mother has another babe, if she can afford to do so.

Many women attending these clinics state voluntarily that they feel better in themselves, since the constant anxiety of an unwanted pregnancy is removed. The object is to make the patient as safe as possible and this can best be obtained by giving her an appliance which depends on her alone and not on her husband. Patients who are supplied with an appliance, are asked to return in a week's time. The second visit is of great importance. Many women are naturally very nervous at their first attendance and cannot assimilate the necessary directions. Certain difficulties may then be cleared up. Patients are asked to come back every six months, so that the clinic can note the results of their instructions and renew the appliance. Each clinic is run by two lady doctors and two midwives. The lady doctors are paid one and a half guineas per session of one and a half hours.

By seeing their patients at regular intervals conditions such as early carcinoma of cervix or early carcinoma of breast and various gynæcological conditions may be detected and then the patient is referred to her doctor or to a hospital for treatment. Moreover, as women would require an appliance of probably a different size after each confinement for the purpose of avoiding conception whilst lactating, the doctor in charge of the clinic would detect any gynæcological condition requiring attention.

The appliance used is Haire's occlusive vaginal pessary, together with a jelly containing lactic acid ("Contraceptalene"). Directions are given in a leaflet.

Contraceptive Methods Used in Other Countries.

Germany.—In Germany the doctors make use of an aluminium cervical cap. The outer diameter of the cervix is measured by a cervicometer; this measurement indicates the cap necessary. There are thirty sizes of cervical caps. Contraception is practised very extensively by the rich, being the only class who can afford the medical fees for the application and removal of the aluminium cap.

Egypt.—In Egypt the posterior lip of the cervix is sutured to the anterior vaginal wall, so as to bring the cervix into the position it occupies as a retroflexed uterus.

The relation of illegal abortion and maternal mortality is so important that some detailed statistics will be given.

Table Showing Deaths from Illegal Operations in New South Wales.

Period.	Total Number.	Average Annual Number.
1916-1920	97	19·4
1921-1925	170	34·0

The accompanying table taken from a paper by Windeyer,[2] indicates that post-abortion septicæmia is a factor to be reckoned with in any attempt to reduce maternal mortality due to childbirth. I have been unable to obtain figures for Victoria, but no doubt our figures are comparable to those of New South Wales.

A study of abortions occurring in Russia, where abortion is legalized, indicates that many lives may be saved and much illness avoided by contraceptive measures. During the year 1924 in Russia[3] the total number of abortions was 150,000. Illness resulted from abortions in 3,000 cases. Deaths from abortions numbered 1,000 and sepsis from abortions amounted to 4% (6,000).

In countries where abortion is not legalized, contraceptive measures would save many more lives and avoid much more illness. During the year 1924 in Germany[3] the total number of abortions was 600,000. Illness resulted from abortions in 78,000 cases. Deaths from abortions numbered 7,000 and sepsis from abortions was 10%. Imprisonments numbered 5,000.

The Ministry of Health Report on Treatment of Uterine Cancer[4] quotes:

Another interesting point raised is the possible association of cancer of the uterus with miscarriages. The figures leave little room for doubt, that the early termination of pregnancy before the fœtus is viable has a definite association with the occurrence of cancer of the cervix.

Puerperal Sepsis.

Puerperal pyrexia was made notifiable in 1926. It is defined as any febrile condition (other than a condition which is required to be notified as puerperal fever) occurring in a woman within twenty-one days after childbirth or miscarriage in which a temperature of 38° C. (100·4° F.) or more has been sustained during a period of twenty-four hours or has recurred during that period.

The number of notifications will, it is anticipated, be numerous, but the great importance of securing adequate treatment in the early stages of puerperal sepsis is regarded as outweighing any objection to the notification of a certain amount of minor illness which gives no cause for anxiety.

So that the more complete notification will have practical value, it has been supplemented by the provision, when necessary, of facilities for assistance in diagnosis and for the treatment of patients who are unable to secure adequate treatment.

The following facilities are provided in the Borough of Kensington:[5] (i) Obstetric specialist, obtained directly by telephone or by notification to the medical officer of health, (ii) hospital accommodation, (iii) nursing assistance by the District Nursing Association.

District nurses with special training in a fever hospital replace the midwife in attendance; the midwife then undergoes disinfection as per regulations, then she carries on with her practice. When a midwife is advised to discontinue practice for a week or so, the local health authorities pay her compensation. The above facilities are provided by all London boroughs. Puerperal sepsis patients are encouraged to go into a fever hospital.

Clinical Aspect of Puerperal Sepsis.

Dr. Leonard Colebrook, of Sir Almroth Wright's Clinic, set out to save the patients suffering from desperate and obviously grave septicæmias (i) by some form of chemotherapy, (ii) by some form of transfusion.

Colebrook considers that Remington Hobbs's therapy of glycerine drainage is on the right lines—the maintaining of a flow of lymph through the uterine wall.

Chemotherapy.

There are only two antiseptics which, introduced into the blood stream, will kill microbes. They are: (i) "Optochin," a quinine derivative; it has not been a success, for you require such a large dose to produce effects, that very likely you would produce blindness. (ii) Drugs of the "Neosalvarsan" type. These have a definite affinity for the hæmolytic streptococci. "Novarsenobenzol" is rather better than "Salvarsan." One dose only is given, 0·6 to 0·9 gramme.

The action of arsenic is very slow, for it takes eight hours to kill streptococci *in vitro*. Two to six hours after the injection of "Novarsenobenzol" the serum of a patient is shown to be killing to hæmolytic streptococci, but it takes eight hours to accomplish that and in the body the organisms are constantly multiplying. If you give too much arsenic, you do a great deal of damage to the leucocytes. The leucocytes of a patient with puerperal septicæmia are more susceptible to arsenic than normal leucocytes. Thus the arsenic therapy is beset with many difficulties.

"Metarsenobillon," in a dose of 0·3 gramme, given intramuscularly combined with whole blood transfusion and glycerine drainage is the therapy Colebrook is now advocating. According to his routine two doses are given at intervals of six hours on the first day and one dose in the morning of the second day. He gives up to six to seven doses over a period of seven days.

Colebrook had a patient with a temperature swinging between 37·7° and 40° C. (100° and 104° F.) with a sterile blood culture, whilst the patient was having the "Metarsenobillon," but on discontinuing the drug the blood culture yielded organisms. He placed the patient back on the arsenic therapy; the blood culture again became sterile, but the temperature persisted 37·7° to 40° C. (100° to 104° F.). (What happened to this patient I do not know, but on my departure the patient was still alive.)

He advocates combining "Metarsenobillon" with Hobbs's therapy, in this way helping to get the arsenic to the place where it is most needed.

Prophylactic Vaccines.

Colebrook informed me that Berlin obstetricians, working with Louro's vaccine, claimed that their mortality was reduced from 8‰ confinements down to 1‰, with an incidence of two cases of puerperal septicæmia per thousand confinements. Berlin advocated this therapy in 1923. Saint Bartholomew's have commenced this form of prophylaxis: dose, two hundred and fifty million hæmolytic streptococci; two or three doses are given. As my investigations included Berlin, I shall leave Louro's vaccine to the Berlin section.

The Glycerine Treatment of Hobbs.

Dr. Remington Hobbs, Obstetric Specialist in Puerperal Sepsis to the Borough of Kensington, uses glycerine drainage of the uterus.

While it is natural to let patient and uterus severely alone, as long as the puerperium is progressing normally, it is not less plain that at the very onset of the symptoms of an infection, seemingly originating in the uterus, everything must be done to expedite the elimination of the noxious uterine contents.

In glycerine we have a drug which causes the uterus to contract and which thus furthers its involution. It is a powerful dehydrant and promotes lymph drainage into the uterine cavity. Owing to its viscosity glycerine remains in contact with the tissues for a considerable time. It does not need emphasizing, how Hobbs's doctrine of lymph drainage was derided and denied by high authority in London. It is as clear an illustration as was ever given of the need which lies upon us all, to keep our minds open to new truths, expectant of them and competent to test and apply them. As Hobbs has given a clear description of his method in a recent issue of *The British Medical Journal*,[6] I shall not go into details. Hobbs makes use of a special obstetric bed, thereby avoiding the moving of a patient from the ward to the operating theatre for treatment. His dictum is: when the temperature is 37·2° C. (99° F.) and pulse 90 (three nines) commence treatment; do not wait for rigors.

In regard to exploration for retained products in the presence of sepsis, Hobbs relies on syringing out the uterus with glycerine and he asserts that in the majority of the cases the products are sooner or later expelled, when as a result of the drainage the uterus recovers its tone. If presenting at the *os*, products can be easily seized with suitable forceps and gently twisted out. Where the hæmorrhage cannot be controlled immediately with glycerine, curage is performed.

If the placenta is not expelled after a reasonable time after labour sixty cubic centimetres of glycerine are injected slowly into the uterus. On several occasions the placenta has been expelled without resort to internal manipulations, the ordinary methods having been tried primarily.

Pyrexia occurring in the puerperium is considered as due to absorption from the genital tract. After a day or two there may be another cause for the rise of temperature, but by procuring drainage no time has been lost.

Sometimes the treatment is valuable in the diagnosis between an inflamed appendix and a right tubal inflammation.

After a small injection of glycerine into the uterus the temperature and pulse rate fall within four to six hours, when the condition is due to salpingitis. Some cases are difficult, as it may be a primary tubal lesion. Glycerine drainage clears up the milder grades of sepsis and prevents many going on to the severer grades of sepsis.

In regard to post-natal treatment all patients are examined on the seventh day. Hobbs states that 75% of patients delivered develope an erosion of the cervix as a result of labour. These patients get daily treatment with glycerine until the twelfth day; they return as out-patients for weekly treatment until the erosion has healed.

The mothers state that life is more pleasant since having glycerine treatment, as they do not suffer from the constant vaginal discharge, which they used to have after their previous confinements.

Case I.—Mrs. A., four days after natural delivery of a full term babe, complained of severe pain in the hypogastrium. The uterus was tender on palpation. The temperature was 40° C. (104° F.), the pulse rate 110. Five cubic centimetres of glycerine were run into the uterus. Within three hours the temperature and pulse came down to normal and remained normal throughout the puerperium. The pain vanished.

The following is the history of a patient with a gynæcological condition who was treated at the Austin Hospital.

Case II.—Mrs. M., aged eighty-six years, suffered from procidentia of the third degree of eight years' duration. Considerable erosion of the cervix was present. There was a patch of leucoplakia, about the size of sixpence, on the anterior lip of the cervix. There was a mucopurulent discharge of about two ounces a day. The patient complained of bearing down pain on walking and of difficulty in micturition.

I started the patient on glycerine drainage of the uterus. This was repeated every day for seven days. On the eighth day five cubic centimetres of a 1% solution of "Novocaine" were instilled into the uterus, the cervix being compressed by special forceps, so as not to injure the eroded external *os*. After a few minutes the "Novocaine" was allowed to run out into the vagina.

The object aimed at was to produce local anæsthesia of the uterine and vaginal mucosa (a replica of the procedure for cystoscopy).

Two cubic centimetres of alcohol were instilled into the uterus. The patient did not complain of any pain following the instillation of the alcohol. Then the uterus was irrigated with glycerine. Glycerine drainage was continued until the fourteenth day. After fourteen days' treatment the patch of leucoplakia had vanished. Glycerine drainage thereafter was carried out once a week. Now after five weeks' treatment the erosion is almost healed, the discharge is white and about two drachms in quantity. The procidentia has been kept in position by Haire's occlusive vaginal pessary, inserted in the morning and removed at night. A saline douche is administered after the pessary is removed.

The patient has been walking about for the past four weeks, free from any dragging pain and bladder disturbance. In her own words: "I never felt better in my life."

Before treatment the suggestion was to use Napier's cup and stem pessary—a rather expensive appliance. Haire's occlusive vaginal pessary is not for this purpose, but I am going to have a modification prepared, which we could use in place of Napier's cup and stem pessary. My modified pessary should not cost more than a few shillings.

The performance of a trachelorrhaphy for an ectropion or erosion assuredly removes most of the inflammatory area and relieves the patient of her discharge, but the associated cellulitis remains with persistence of the pains and in not a few cases the patient returns with salpingitis. Glycerine therapy is medical gynæcology for erosions, ectropion, salpingitis and pelvic cellulitis. If leucoplakia, the most chronic form of inflammation, can be made to disappear with glycerine, in my opinion medical gynæcology should be given a trial in inflammatory conditions of the cervix. Avoid introducing the glycerine under pressure as it causes pain. I am indebted to Dr. Robert Fowler for permission to carry out this therapy.

Might we add an improvement to Hobbs's therapy in puerperal sepsis. Subcutaneous injections of typhoid vaccine as prophylaxis have given way to oral administration of the vaccine preceded by an ox bile pill.

Besredka obtained successful results in puerperal sepsis by packing the uterine cavity with gauze soaked in an autogenous vaccine.

If we followed up glycerine drainage by instilling a vaccine into the uterine cavity, might we not provoke a response of antibodies locally? This suggestion may be worth a trial.

Saint Thomas's Treatment.

Mr. Wyatt, of Saint Thomas's Hospital, Obstetric Specialist in Puerperal Sepsis to a fever hospital in a borough of London, holds that puerperal sepsis exhibits a seasonal incidence in London. In June, July and August there are very few cases admitted into his fever hospital.

Mr. Wyatt recommends a preventive routine douche of soapy water every day for last three months of pregnancy, as coitus is very frequent during the last three months of pregnancy among the poorer classes in London. The expectant mothers have a firm belief that, if they have frequent coitus especially in the last few weeks, even to the onset of labour, they will have an easier labour. Belief is that the act of coitus dilates up the *ostium vaginæ*. Unmarried mothers have the same view.

In the treatment of puerperal sepsis Mr. Wyatt uses intravenous injections of *hydrargyrum perchloridi* 3·7 milligrammes (one sixteenth of a grain) at intervals of forty-eight hours depending on the reaction. Most of his patients showed signs of immediate improvement. He has given up using antistreptococcal serum, but is going to give the new scarlet fever antitoxin a trial.

In peritonitis Wyatt reports 70% of recoveries. He has had forty cases of peritonitis among 240 of puerperal sepsis. He operates as soon as he makes the diagnosis. Three small incisions are used, cigarette drains, gauze and rubber dam are inserted. One drain goes into the pouch of Douglas and one drain into each iliac fossa. The drains are left undisturbed for four days, then they are changed from time to time. Drains are used up to three to four weeks. Light chloroform anæsthesia is used.

Wyatt avoids transference of the patient from ward to theatre; he operates in the ward. Blood transfusion has been tried after operation with success.

Quinine Treatment at The London Hospital.

Mr. Gordon Luker, of London Hospital, has adopted the quinine and serum treatment of puerperal sepsis. In the morning twenty cubic centimetres of polyvalent antistreptococcal serum are given subcutaneously. In the evening 0·3 gramme (five grains) of quinine bihydrochloride in ten cubic centimetres of normal saline solution is given intravenously. This is repeated for three days. Then intramuscular administration of quinine is used; 0·3 gramme (five grains) of quinine bihydrochloride in one cubic centimetre saline solution is given daily into the buttock for seven days. Strict asepsis is necessary and the fluid is massaged away from the site of injection.

The percentage of recoveries is very good in hospital and in private practice. Luker emphasizes that if you want good results, you must have the patients under your own personal observation.

In an early case start with intrauterine glycerine drainage and at the same time give serum and quinine.

Treatment at Other Institutions.

At the Royal Free Hospital Miss Gray and Miss Hall use quinine bihydrochloride 0·3 gramme (five grains) in one cubic centimetre of sterile water or saline solution. Intramuscular injections are given twice a day for five doses. If the temperature still persists, they give antistreptococcal serum (forty cubic centimetres) subcutaneously and repeat this in twelve to twenty-four hours.

In cases of *Bacillus coli communis* septicæmia intramuscular injection of quinine bihydrochloride has brought the temperature down by crisis.

Professor Louise McIlroy has adopted Hobbs's glycerine drainage. She is pleased with the results in puerperal sepsis; after running in glycerine she leaves the catheter in the uterus.

The London Maternity Hospital and Queen Charlotte's Hospital treat puerperal sepsis by glycerine drainage. Mercurochrome, 220 soluble, has been given an extensive trial in London. Cook, of Guy's Hospital, tried it on forty-eight cases of puerperal septicæmia without any success, so mercurochrome has been dropped. He has had some success with blood transfusion using the citrate method; repeated small transfusions are given.

Amsterdam.

The maternal mortality rate of Holland speaks for itself. The results are not brought about by

one factor, but are arrived at by concerted effort—team work. The Public Health Department is leader of the team, comprising doctors, nursing organizations, social workers, dispensaries and a guided and instructed public. I am indebted to Dr. Heijermans, Director of the Public Health Department, for this information.

Medical Students.

The medical course extends over a period of eight years. Three months' practical obstetrics are obtained in the State Maternity Hospital. There are four universities in Holland and in the hospitals where medical students are trained in obstetrics, only maternity nurses are trained.

Midwives and Maternity Nurses.

The course of training for midwives is three years, one year of which is spent in delivering patients in their own homes. Trained nurses, wanting the midwifery certificate, must do the whole three years' course of midwifery. The majority of trained nurses do maternity nursing, which is a twelve months' course. They are trained in a maternity hospital, where medical students undergo training. Maternity nurses do no deliveries. There are two State training schools for midwives in Holland, one in Amsterdam and one in Rotterdam. All the other maternity hospitals train maternity nurses only. Midwives receive instruction from a whole-time professor and a sister tutor, the object aimed at being highly efficient midwives. Fifteen new pupils are admitted to each school every year. The fees are £16 per year. Thirty midwives graduate annually for a country with a population of about eight million.

As the number of midwives is limited, they can earn a comfortable income and not be tempted into doing illegal abortions. The average income of a midwife is three thousand gilders (£250). She conducts about one hundred confinements *per annum*. Midwives do 60% of the confinements in Holland.

Maternity nurses act as assistant to doctor or midwife. This excludes the handy women.

Rrefresher courses are free. A three weeks' course in the Midwives' School of Amsterdam and Rotterdam is held every year. City midwives attend the course every day. Fifteen rural midwives come down for the course. They reside in the training school for midwives (free). The fifteen pupil midwives who annually qualify act as *locum tenentes* for these rural midwives. The expenses of the *locum tenens* are paid by the municipality. The newly graduated midwives thus get an insight into how to run a practice. Rural midwives welcome the opportunity to brush up their work; at the same time they have an excellent holiday, for the social side is not neglected.

Refresher courses are not compulsory, but if a midwife has had several cases of puerperal sepsis and has not attended refresher courses, she is interviewed by the Medical Officer of Health and advised to do a refresher course, otherwise she will run the risk of losing her certificate.

Municipal midwives are supervised by public health doctors.

The Social Worker.

The social worker, a trained nurse midwife, belongs to a branch of the Public Health Department. She inspects the homes of expectant mothers to determine suitability of the confinement at home. She determines whether the mother requires extra nourishment. She attends the hospitals on booking days, so as to get into contact with the unmarried mother as early as possible and she arranges for her admission into a hostel. In the case of single girls coming to out-patient departments to find out if they are pregnant and if the doctor suspects pregnancy, the social worker interviews the girl and arranges for her to have a holiday in the hostel until the pregnancy can be definitely excluded. The authorities recognize that the unmarried mother, pressed by stern demands from all sides, falls an easy prey to the abortionist with disastrous results to her own health. The social worker determines whether the expectant mother can afford a private doctor's or midwife's fee. The midwife's fee is up to fifty gilders. Doctors attend the middle class for sixty gilders and upwards.

The social worker unites unmarried mother and her babe to the parents. The result is that there are no foundling hospitals in Amsterdam.

Ante-natal Care.

In regard to ante-natal clinics 99% of patients confined in Holland have complete ante-natal care. The average number of cases of eclampsia in Amsterdam is eight *per annum*.

Amsterdam has a population of 700,000; the births number 14,000, deaths from eclampsia about 20%.

True, in the Women's Hospital, Melbourne, in 1925, we had only one death in forty-two cases of eclampsia. The population of Melbourne in 1925 was 899,000 and the births in 1925 were 17,900. But let us consider these figures—forty-two cases of eclampsia in 17,900 births—from the aspect of preventive medicine.

Some obstetricians would state that our higher rate of eclampsia is because of the larger consumption of meat in Melbourne than in Amsterdam. No doubt a large quantity of meat is consumed here, but how would this view explain the occurrence of eclampsia in the cow and the mare. These animals do not eat meat. H. Nevermann[7] states, that out of a series of nearly three hundred patients who had suffered from eclampsia from one to twenty-three years previously, only sixty were traced. Of these sixty women, thirteen reported severe headache, twelve complaind of poor memory, four patients had visual defects, five had some swelling of the legs and eight women had high systolic blood pressure (140 to 170 millimetres of mercury).

Truly women pay heavily for neglecting to have ante-natal care throughout pregnancy.

Ante-natal care in Holland is conducted in dispensaries. There are sixteen dispensaries in Amsterdam. Only a small proportion of the midwives send their patients to the ante-natal clinic. Each dispensary has a staff of four to eight part-time local practitioners, also a midwife and a complete unit of trained nurses.

The dispensary doctor's salary for a junior is £200 *per annum*, for two sessions of two and a half hours per week. A senior receives £406 *per annum* for two sessions per week. There is no honorary system in Holland—all doctors in public hospitals are paid by the State.

Younger doctors are given preference in the dispensary appointments, so as to give them a start, whilst they are working up a practice. Each dispensary has a lady doctor on the staff who acts as child welfare doctor. Each dispensary contains an operating theatre for minor surgery, tonsillectomy, herniotomy in children *et cetera*. Trained nurses visit patients in their districts.

Expectant mothers suffering from venereal disease are treated at ante-natal clinics on the same day as other mothers, *os* the expectant mothers suffering from venereal disease (who in many cases are not to blame) are not shamed in having to attend separate venereal disease clinics. A municipal maternity nurse treats venereal disease patients in their own homes, when the expectant mother is unable to attend.

The Director of Maternal Welfare (male) gives a course of lectures including films to expectant mothers at the dispensary on one evening per week for two months. Supper is provided. Four courses of lectures per year are given. The Director tried pamphlets, but he gave this scheme up, as patients never read them. Verbal exhibitions and the personal touch are more efficacious. Courses of lectures to fathers are given at the dispensary. Supper and cigars are provided. Talks on venereal disease are given, also talks on the part of the father in the care of mother and child. By these talks the fathers insist on their wives attending the ante-natal clinic and the lectures on maternal welfare.

Mothers in labour are conducted in ambulances only, free of charge. The ambulance first calls on a municipal midwife, then it goes to the patient. If the confinement is going to occur in the ambulance, the ambulance stops on the side of the road, apparatus is always to hand and the patient is delivered by the midwife.

If a doctor sends a patient with *post partum* hæmorrhage into hospital, he must accompany the patient in the ambulance.

Prematurity.

Premature babes are all treated in hospital till out of danger. The ambulance calls at the Public Health Department for an incubator, which is taken to the patient's home; thus the premature baby is conveyed at an even temperature (in winter this precaution is obvious) to the maternity hospital. A maternity nurse expresses the mother's breast into a sterile jar (which is provided by the Public Health Department) every four hours. This milk is taken to hospital to feed the baby. When the mother is able to go to hospital, she does so for four-hourly breast feeds. Thus many premature babes are saved. The infant mortality of Amsterdam is 40‰.

Amsterdam is analagous to Manchester in regard to slums. If the mother has no breast milk, constant supply is obtained from unmarried mothers in hospital who after feeding their own babies have their milk expressed; the milk is collected in sterile jars.

Puerperal Sepsis.

All patients with puerperal sepsis are sent into the fever hospital, whether they are under the care of midwife or doctor.

Criminal abortion is high in Amsterdam.

Very few cases of puerperal sepsis occur in summer—June, July and August.

A midwife having a patient with a high temperature telephones the Public Health Department. An obstetric consultant of the Department sees the patient and the patient is sent into the fever hospital, if she is suffering from sepsis. Puerperal sepsis is considered to be contagious; this method avoids the risk that exists in England, where the midwife must call in a local practitioner who may carry infection to other confinements. The midwife undergoes disinfection, bag, instruments *et cetera*, in a disinfecting station. Having done so, she continues with her practice. The Public Health Department does not penalize its midwives, for they consider that childbirth is inseparable from a certain amount of risk to life, both the mother's life and that of the infant and that assuming an adequate degree of care and skill on the part of doctor or midwife, they are no more to be held blameworthy for the casualties of midwifery than they would be for the unfavourable termination of a medical or surgical illness.

Treatment.

Quinine bihydrochloride, two hundred milligrammes, are given *per os* daily till pulse and temperature remain normal. Polyvalent antistreptococcal serum in twenty cubic centimetre doses is given intramuscularly every day for four doses.

No intrauterine culture is carried out.

Occasionally they irrigate the uterus with lukewarm water for foul lochia. They stimulate the heart, when necessary, with digalen. They can save patients yielding hæmolytic streptococcus on blood culture. The prognosis, when blood culture grows staphylococci, is regarded as hopeless. The mortality is 60% in the septicæmias.

Berlin.

I am indebted to Dr. Hamel, Director of Health Services for Prussia, for aiding me in this investigation.

Training of Medical Students.

Three months' training in practical obstetrics is given to students in the University *Frauenklinik*.

Post-Graduates.

Before going into practice doctors stay three months in a midwives' hospital. They attend the abnormal confinements and give anæsthetics under the supervision of the assistant to the professor. They receive free board *et cetera*, but no salary. Assistants (salaried) are selected from the post-graduates.

Training of Midwives.

Midwives are trained in a midwives' hospital for pupil midwives only. There is a whole-time professor, also a sister tutor for teaching. There are twenty training hospitals for midwives in Germany. Twenty midwives graduate yearly from each training school. Four hundred midwives graduate every year for a population of sixty millions. After a midwife graduates (eighteen months' course in Berlin) she must act as a sister in a provincial maternity hospital for six months, before she can go into practice.

A special permit must be obtained by the midwife from the Health Department before she can settle in any locality in Prussia for practising midwifery. The number of midwives required in a district is based on the average birth rate of the particular district. A midwife remains as sister in the provincial maternity hospital until a permit is granted to her.

In order to insure a reasonable income and encourage better educated women to take up midwifery, a definite list of fees, varying with the income of the parents, has been fixed by law. A midwife may claim compensation from the State, if her annual income without neglect of duty on her part falls below a fixed minimum (£250 *per annum*). The midwife does not collect her fee from the parents, it is paid direct by the *Kasser* (a form of friendly society or State insurance) to which the husband contributes weekly.

The midwife's fee for poor people is a minimum of thirty-five marks (£1 15s.). The middle class patients pay a minimum of one hundred marks (£5). Midwives attend 75% of the confinements in Prussia. Refresher courses and periodical tests are held every three years. The course lasts for three weeks. All travelling expenses are paid.

Midwives are resident in a midwives' hospital. If a midwife fails to attend without sufficient reason, her licence to practise in her district may be withdrawn.

Supervision of Midwives.

Midwives are placed under the supervision of a medical officer of health.

Puerperal Sepsis.

Dr. Phillip, Assistant to Professor Stockl, has carried out investigations on puerperal sepsis. The factor of greatest importance in puerperal sepsis is the virulence of the organism. He has evolved the formula:

$$V \times \frac{J}{A}$$

where V = virulence of organism, J = invading power of the streptococcus, A = resistence of the patient.

The virulence of the streptococcus increases gradually, not suddenly from avirulence.

Phillip was able to convert avirulent strains into virulent strains of streptococci by adding decomposing organic tissue to the culture medium; the organisms were grown under anaerobic conditions. He drew the conclusion that the protein decomposition products were the influencing factors. By adding pure amino acids to a growth of an avirulent strain of streptococci the virulence increased. Virulent strains that have become avirulent, can be more easily converted to virulence than strains originally avirulent by the addition of amino acids.

Virulent gonococci become avirulent in chronic stages of inflammation, then in the presence of decomposing tissue (break down products of protein) become virulent again.

Virulence test (Ruge's) concerns the vaginal streptococcus (vaginal secretion). If it can be grown in the patient's own blood, then it is a virulent strain. If it cannot be grown in the patient's own blood, it is an avirulent streptococcus.

This test is used in carcinoma of the cervix. If the culture demonstrates a virulent streptococcus, delay operation till culture yields no virulent organisms and so avoid fatality from general peritonitis. Vaccines are administered to bring about a sterile culture.

If Cæsarean section is to be performed and if a virulent streptococcus is present in the vaginal secretion (Ruge's test positive), delay operation till vaccines bring about a sterile culture.

In a case of sepsis the plate in the incubator must be watched at intervals. If the colonies are increasing, the organism is very pathogenic; it will grow in any kind of blood. The rapidity of growth demonstrates infectivity of strain more so than hæmolysis. The least one can hope for with a virulent streptococcus is an endometritis and general symptoms, but very often septicæmia and pyæmia develope.

A virulent streptococcus of puerperal fever and erysipelas through several subcultures became avirulent. To prove this was so Phillip injected a solution of a virulent strain which had passed through several subcultures, into the subcutaneous tissue of his forearm. No local or general reaction resulted. An avirulent type of streptococcus does not multiply in the blood. Resistance of body is important, it overwhelms these streptococci.

With a virulent type of streptococcus the resistance of the body has but little chance.

The non-virulent type of *Streptococcus hæmolyticus* is very much less resistant to chemicals,

heat and drying, than a virulent hæmolytic streptococcus.

A passage of hæmolysis to green in culture medium (*Streptococcus viridans*) indicates decrease in virulence. The presence or absence of hæmolysis does not indicate whether the streptococcus is avirulent or virulent. In a case of puerperal sepsis hæmolytic streptococci were found in the lochia of the uterus and blood culture grew non-hæmolytic streptococci. Hæmolytic streptococcus, injected into a mouse, later becomes *Streptococcus viridans*. In animal and laboratory experiments there is no doubt that you can get change of *Streptococcus hæmolyticus* into *Streptococcus viridans*.

Case III, death from puerperal sepsis. In this instance blood culture yielded *Streptococcus hæmolyticus*. Section of the uterus showed that lymphatics were swarming with *Streptococcus viridans*. Subculture of blood yielded *Streptococcus viridans*.

Case IV, puerperal sepsis. By the use of blood agar plates blood culture on the seventh day *post partum* yielded a *Streptococcus hæmolyticus*. On the eighth day *post partum* blood culture yielded *Streptococcus viridans*. On the ninth day *post partum* blood culture yielded *Streptococcus hæmolyticus*. On the tenth day *post partum* blood culture yielded *Streptococcus viridans*. Death occurred. From the endocardium a growth of *Streptococcus viridans* was obtained.

The blood picture is the criterion in puerperal sepsis. There is a decrease in the lymphocyte count, an increase in the leucocyte count and a disappearance of eosinophile cells.

No change occurs in the blood picture whether a non-hæmolytic streptococcus, an hæmolytic streptococcus, or gas-forming bacillus *et cetera* is present. If the curve of young neutrophiles is high or if as the number is going down, a rise occurs, it indicates a complication, which is serious in relation to the height of the neutrophile cell curve.

Quinine in certain concentrations prevents hæmolysis in the tube. "Eucopin" (Isoamylhydrocuprein) has a similar action in the blood stream, it exhibits a high bactericidal power in the test tube to streptococci. The only way to judge a therapy is to take a bacterial count before and after drug is administered.

Therapy.

Louros's prophylactic vaccine after two years' trial has been given up. Glycerine iodine drainage is undergoing a trial. Phillip advises the avoidance of instilling an excess of glycerine, as sometimes patients develope anæmia from absorption.

Polyvalent antistreptococcal serum is of use only in early cases. It is administered intravenously. Quinine bihydrochloride is used after criminal abortion. It is given in doses of 0·45 gramme every half hour up to four grammes. It is said to clear up sepsis. Occasionally the patient goes to term, if she is only suffering from a threatened abortion. In puerperal fever with rigors for days and positive blood culture a mortality of 80% is reported.

"Narcylen" narcosis is used by Gauss and Wieland. The object is to attack the bacteria *viâ* the pulmonary circulation, as there is a larger area of absorption. Salivation is prevented by "Scopolamine." Blood cultures are taken before and at the end of narcosis. Schottmüller's non-fibrinized blood agar is used.

They begin with a concentration of 80% "Narcylen" and work down to 50% concentration and continue at this strength for forty-five minutes. Next day sixty-five minutes' narcosis is induced. The blood becomes sterile after several days' treatment.

Effect of gas on organisms passes off with escape of gas from blood.

"Narcylen" has no influence on the growth of cocci in the test tube. It is possible that the gas may induce a change in the hydrogen ion concentration, which interferes with the nutrition of the organism. Among nine patients there were eight deaths. The eight persons who died, had purulent metastases.

Paris.

I am indebted to Dr. Pottevin, Director of Health for France for aiding me in the Parisian investigation.

Medical students do three months practical work in a maternity hospital. Midwives have a two years' course in a midwives' hospital.

Puerperal Sepsis.

At the Hospital Baudelocque if the placenta is known to be incomplete, manual removal is done up to forty-eight hours after labour or abortion. Microbial filtrates (streptococcal) were tried for several years in puerperal sepsis without success and have been given up. General treatment together with antistreptococcal serum constitutes the therapy throughout France. Polyvalent antistreptococcal serum in doses of sixty to eighty cubic centimetres is administered subcutaneously daily, up to eight days.

The Pasteur Institute is typing out the various strains of streptococci and is preparing specific sera.

Veterinary Obstetrics.[3]

In parturient sepsis in the cow local treatment is undertaken. The uterus is douched with lukewarm water. An antiseptic suppository containing four ounces of glycerine is placed inside the uterus. (Thus it constitutes a form of glycerine drainage.) For the septicæmia quinine or sulphite of soda is used. The mortality is 50%.

Application of these Observations.

In consideration of the material reviewed, the best scheme to follow is as follows:

Prevention.

The simple solution is the value of team work. It is proper to affirm that the value of a team depends upon the driver and the consent of the team to be driven. It also depends upon the foothold.

The leader of this team should be the Public Health Department. We should endeavour to

improve the existing services of midwife, medical practitioner and obstetric specialist.

A study of the maternal conditions which bears upon the liability to contract puerperal sepsis, could only be carried out by prolonged and elaborate research. Facilities for such research should be provided and the closest collaboration should exist between the research worker, the physician and the surgeon.

The Medical Student.

The aim is to have doctors trained to the utmost degree of efficiency. The amount of time the student is required to give to the study of practical midwifery is deplorably short of what it should be. Out of two years and eight months clinical training for qualification, only five weeks are allowed for learning the whole clinical obstetrics, a branch of medicine above all others which he may be called upon to practise single handed, ready for all its urgent possibilities. The responsibility for the inefficient training must rest with the various examining bodies who have had it in their power to prescribe what rules and regulations they deem right. The adoption of such a scheme of training as is carried out at Saint Thomas's Hospital, together with the establishment of "duly performed" (D.P.) certificates or class examinations in midwifery (as carried out in Edinburgh) after each batch of students has completed its term of three months training in the Women's Hospital, will lead to a definite improvement. District homes and a large extern department should also be established. The sisters in charge should be appointed from the Women's and Queen Victoria Hospital staffs. District homes will reduce the number of cases of babies born before the arrival of the attendant. Students could get their ten extern cases. Pupil midwives and maternity nurses attached to district homes would be able to have experience in the patient's own home.

Midwives.

To train midwives to the utmost degree of efficiency should be our aim. Dr. Springthorpe[9] at a Conference on Maternal Welfare in London, 1926, stated: "In Australia the midwife is not considered a sufficiently skilled attendant."

England is aiming at a three-year course of training for midwives. Holland and Sweden have a three-year course for midwives. The maternal mortality rate of these countries speaks for itself. Midwives should be trained at one hospital only. Authorities abroad maintain that midwives are best taught in hospitals which do not train medical students.

In Victoria we have the ideal arrangements. The Queen Victoria Hospital which is not a teaching school for medical students, could constitute the sole training school of midwives for the State. An extern district run in conjunction with the hospital (this extern district acting as the post certificate school for midwives) for practice in the patient's own home would complete the training of the midwife.

Other maternity hospitals ought to train maternity nurses only. From the Women's Hospital point of view they might ask where they are to get nurses to do a maternity nursing training. Such a difficulty should not arise. Nurses from the gynæcology side, instead of doing twelve months gynæcology, could do six months gynæcology and six months maternity nursing.

The number of pupil midwives should be limited to the needs of the State. In Victoria we have more midwives than we require. For a midwife to make a comfortable living she would require to do about one hundred confinements yearly. At this rate, even if all deliveries in the State were conducted by midwives, we would require but four hundred midwives. As midwives do but 11% of the confinements, four thousand *per annum*, one cannot understand why over one hundred midwives graduate yearly in Victoria (population one and a half million). True only about 25% intend to practise. An excess of midwives who do not intend to practise, means a waste of confinements to train them and a loss of about £10,000 *per annum* to the profession.

Too much of our teaching is theoretical. Pupil midwives in England are taken to the pathology museum for demonstrations on specimens of embryos, concealed accidental hæmorrhage, ruptured uterus, hydatidiform mole *et cetera*. The preventive aspect is stressed during the demonstration. In Melbourne they hear of these conditions in their lectures and write about them in examinations, but frequently they have never seen them during their course in hospital.

The appointment of a sister tutor is also important. The most important part of a midwife's training is the provision of a thoroughly practical midwife under whom she shall work. An articulate textbook is useless to both a pupil midwife and a medical student. Many of us may remember our own undergraduate days; how we came away from a lecture dissatisfied, feeling that we could have read it in our textbooks to better purpose in half the time. Mere recital of facts is not enough and the teacher must be prepared to explain the principles upon which they are based, and to realize that midwifery is not a subject independent of itself, but its foundations are deeper and are based on anatomy, pathology, medicine and surgery, taking each of these in the widest sense.

Refresher Courses for Midwives and Post-certificate School.

In most European countries the laws governing the practice of midwives make provision for periodic refresher courses. In Victoria no courses are yet available. Yet it is almost impossible for a midwife to maintain a good standard of work, far less to keep abreast of modern methods, when she has only had a short period of training and no subsequent opportunities of instruction. The prob-

lem of the provision of a *locum tenens* has been overcome by Holland, the thirty newly qualified midwives act as *locum tenentes* for the thirty midwives who come from the country. The Midwives' Board could make use of the post-certificate courses for disciplinary purposes. Midwives, who had shown themselves to be careless, ignorant or ill-trained, might be required to take a refresher course at the post-certificate school in lieu of suspension or even removal from the roll. The level of practice in the State would inevitably rise to the benefit of the community. The Post-Certificate School prospectus (York Road) will illustrate how we can mitigate the evil of the untrained midwife. A sister tutor can do a lot in two months. Refresher course (Kent), this booklet which is given to all midwives attending the refresher course, represents the series of lectures printed out and arranged by the Kent County Council. I am indebted to Dr. A. Greenwood, Medical Officer of Health for Kent, who kindly let me have a copy. Copy and refresher courses are free to all midwives practising in the county. The lectures are by leading authorities in their own particular branch of midwifery. This refresher course is held annually.

Maternity Homes.

Davis,[10] of the Bellevue Hospital, New York, states that the lack of hospital accommodation and facilities is given as an explanation of the bad obstetric results. This excuse, he states, is not valid. Complications are more conveniently managed, observed and nursed in a well-equipped hospital.

Out-patient departments care for thousands of women in their clinics and deliver them in their homes, in surroundings quite as unfavourable as any to be found in private practice. In morbidity and mortality they rival those of the indoor institutions. During four and a half consecutive years in the out-door department of the Lying-in Hospital, eleven thousand women were confined in their homes without one maternal death. Of the patients with complications sent into the hospital during this time twenty died, a maternal mortality of 1·8‰.

Ante-natal care cannot be delegated solely to nurses. Large order as it is, I can conceive of no one thing which will do more towards better results in obstetrics than the doing away with the "emergency case."

Notification.

Early notification of all cases of puerperal pyrexia is necessary, so that treatment could be commenced without delay.

For the compiling of accurate records of puerperal sepsis record cards as issued by the Ministry of Health in England are best. Information from a doctor should be obtained by a doctor and not as in England by a nurse. The lady doctor acting as Inspector of Midwives could obtain these records.

A social worker should belong to a branch of the Public Health Department. This office is best held by a trained nurse midwife.

Inspectors of midwives should also belong to a branch of the Public Health Department.

Ante-natal Clinics.

An adequate and universal ante-natal clinic service is required. While ante-natal examination is valuable, more harm than good would be done by any attempt to encourage midwives to conduct complete ante-natal care. The expectant mother should be seen by a doctor at the earliest opportunity and again at the thirty-sixth week. Ante-natalism, the science of obstetrics, is the doctor's work.

In Wales midwives attend about 90% of the deliveries, conducting their own ante-natal care. The mortality[11] (1919-1922) is 5·4‰ births. Ante-natal welfare clinics are best run by part-time local practitioners. There should be a consultant obstetric specialist for ante-natal care. When the doctor or midwife requires a second opinion patients are to be sent to an obstetric specialist appointed by the Public Health Department, who would hold monthly ante-natal consultations in the City Hall.

Administration and Treatment of Puerperal Sepsis.

Further research into the pathology and treatment of puerperal sepsis is urgently needed, if advance is to be made and the mortality reduced. It is clearly most difficult to secure this result, when patients are treated as isolated units in private hospitals.

All puerperal sepsis patients should be sent into a separate ward of the fever hospital (a maternity hospital always sends its scarlet fever patients to Fairfield Hospital) with an expert in puerperal sepsis available, where pathological and bacteriological examinations could be carried out and the opportunity would exist of investigating the value of different methods of treatment.

As the medical practitioner receives such a low fee for a confinement, the calling in of a consultant to a patient with sepsis would result in his own fee being paid in monthly instalments, if at all. So the doctor must of necessity hesitate, hoping that the pyrexia is merely due to constipation. The condition passes on to the severe form of sepsis, when treatment is often of no avail. An obstetric specialist should be appointed by the Public Health Department; he would be available to be called in free of charge by any medical practitioner desirous of assistance in regard to the diagnosis or treatment of puerperal pyrexia.

Until the time comes when all patients with puerperal sepsis are sent into the fever hospital, midwives having patients with puerperal sepsis should be replaced by specially trained nurses on the staff of the District Nursing Society.

After the midwife has carried out disinfection, she should be allowed to carry on with her practice. A midwife should be compensated by the State when she is ordered to give up work for a week or so to prevent the spread of puerperal sepsis.

To speak of routine treatment in any branch of medicine is inaccurate and to speak of it in such

a wide flung infection as puerperal sepsis is doubly so. The variation and multiplicity of attack upon the body calls for careful observation and personal treatment in each case. It is obvious that each case must be dealt with on its own merits. Nevertheless large groups of cases present in the early stages fairly constant clinical manifestations. Therefore when treating large numbers of patients it is of help to have some idea of a definite course to follow, so long as the individual factor is kept strongly in view. In the septicæmias it is even more important not to generalize too strictly. The individual resistance to the organism must be considered. The toxic power of the organism itself may vary so much that an early mild local infection, such as a torn perineum, may hold greater promise of a future fatal result than may the severely lacerated cervix, vagina and rectum following a difficult forceps delivery.

Turning to a consideration of the therapy of puerperal sepsis, good nursing is essential.

Ultra-violet Light.

Ultra-violet light (artificial sunlight) therapy is being advocated in England. It is a truism that the obvious is frequently neglected. We have sunlight all about us, less so in the winter. Familiarity breeds not only contempt, but indifference and neglect. That ultra-violet light has a definite antibactericidal effect is well known. Might this explain the occurrence of fewer cases of puerperal sepsis in London (Wyatt) and Amsterdam during the summer months. The problem of using this form of therapy I leave in abler hands than mine; the elucidation of this problem we can leave to Dr. Bell Ferguson. Fresh air and sunlight play an important part in the therapy of puerperal sepsis. These accessories are best obtainable at Fairfield Hospital. Private hospitals, even the Women's Hospital, do not compare with the facilities for fresh air, sunlight and good nursing existing at the Fever Hospital.

Glycerine Drainage.

In glycerine drainage we have at our disposal a most valuable therapeutic method, useful both in obstetrics and gynæcology and one which no doubt further clinical research will firmly establish as one of the most valuable in the whole medical armamentarium in the prevention and treatment of puerperal sepsis. The glycerine should not be heated, as it loses its viscosity. I have used glycerine with admirable results and I am convinced that the results achieved by Remington Hobbs, the enthusiasm he displays for this method of treatment and his clear description of the technique to be followed will induce many to follow in his footsteps.

Quinine bihydrochloride and polyvalent antistreptococcal serum can be used for attacking the bacteriæmia.

Drugs.

Quinine is best administered intramuscularly, the dose is 0·6 gramme (ten grains) in two cubic centimetres of sterile water given every day.

With regard to intramuscular injections of quinine, subsequent severe pain is always a sign of faulty technique and the usual error is to give the injection too low in the buttock. The best site to give the injection is in the middle third of a line drawn from the anterior superior iliac spine to the top of the natal fold. The fluid should be gently massaged away from site of injection. Quinine in Parke Davis and Company's ampoules has been used with success, it is thus easily carried about.

"Metarsenobillon" has so far been tried only at Colebrook's clinic in England. One can only remark that any treatment which will improve the patient's general condition or increase her resistence to the toxic effects of the bacteria, should be tried.

A combination of glycerine drainage, quinine bihydrochloride and polyvalent antistreptococcal serum seem to form the keystone of the therapeutic arch in the treatment of puerperal sepsis.

Puerperal Peritonitis.

Early operation affords the best prospects of recovery from puerperal peritonitis. As soon as the condition is recognized, drainage of the peritoneal cavity should be carried out.

Puerperal peritonitis patients are frequently abandoned to a fate which seems inevitable, but which is in fact avoidable. Apparently we have been so impressed with the helplessness of many of these patients, that no operative interference is attempted, except in the more chronic variety of case, where the disease has become encysted.

As a result of *post mortem* examinations Belugin[12] states that simple peritonitis was found relatively seldom (14%); usually it was accompanied by general sepsis which was the type of septicæmia rather than of pyæmia.

I refer you to this reprint, "Pneumococcal Peritonitis," by John Fraser,[13] which he kindly gave me. This paper will convince you all that the treatment of puerperal peritonitis is early laparotomy. Fraser in his paper advocated blood transfusion at the onset of the septicæmic stage; but he informed me that now he types the pneumococcus and, if it is Type I, he has in Type I serum a very powerful therapeutic measure. The mortality is 35%. The vaginal route of drainage was advocated by Sir Harold Stiles. Fraser informed me that he prefers the suprapubic route. Only a simple suprapubic drain is necessary.

I confess it was with a measure of trepidation that I chose the subject of this address.

Puerperal sepsis is one of life's catastrophies and we can all do much to avert disaster, if we are alive to the possibilities.

Acknowledgements.

I offer sincere apologies for the length of this address. Longfellow in his "Wind over the Chimney" tells us that books are "sepulchres of thought" and if I have dug a grave of disconcerting depth, it is because of the multiplicity of the

thoughts. Quotations have been freely used, where the thought has been happily expressed by others.

My difficulty is to thank the many friends who have helped me and if in my acknowledgements I have forgotten any, it is not that I am ungrateful. My first and my deepest debt I owe to Dr. Park, Chief Medical Officer, Australia House, London.

If the address has any real value, it is due in no small measure to the generous assistance of many collaborators and to all of them I tender my thanks.

References.

(1) Eric Pritchard: "Pros and Cons of Contraception." *National Health*, May, 1927, page 427.

(2) J. C. Windeyer: "The Joseph Bancroft Memorial Lecture: Puerperal and Post-Abortion Sepsis," The Medical Journal of Australia, October, 1927, page 462.

(3) W. Horsley Gantt: "A Medical Review of Soviet Russia," *The British Medical Journal*, October 30, 1926, page 802.

(4) Janet E. Lane-Claypon: "Results of Treatment of Uterine Cancer," *The British Medical Journal*, January 14, 1928, page 69.

(5) Annual Report, Borough of Kensington—Circular, 1926.

(6) A. Remington Hobbs: "A Method of Draining the Septic Uterus," *The British Medical Journal*, December 31, 1927, page 1223.

(7) H. Nevermann: "*Über das weitere Schicksal der an Eklampsie erkrankten Frauen*," *Archiv für Gynäkologie*, January 31, 1927, *Band* CXXIX, *Seite* 891.

(8) J. F. Craig: Fleming's "Veterinary Obstetrics," "Metritis and Parturient Fever," page 490.

(9) J. W. Springthorpe: "Midwifery in the Homes of the People," "Conference on Maternity and Child Welfare, Report of the Proceedings," July 5, 1926, page 121.

(10) Asa B. Davis: "Report of the Bellevue Hospital, New York," 1927.

(11) Janet M. Campbell: "Maternal Mortality," "Ministry of Health Report, Number 25," 1924, page 17.

(12) I. W. Belugin: "Puerperal Peritonitis," *The British Medical Journal*, October 31, 1925, page 66.

(13) J. E. McCartney and John Fraser: "Pneumococcal Pertonitis," Reprint from *The British Journal of Surgery*, Volume IX, April, 1922.

Reports of Cases.

AN ACUTE MASTOIDITIS.

By Ralph Weaver, M.B., Ch.M. (Sydney),

Honorary Assistant Ear, Nose and Throat Surgeon, Mater Misericordiæ Public Hospital, Brisbane.

There are several points of interest about the following case that make it worth recording.

Clinical History.

A.T.D., male, *ætatis* twenty-two years, first consulted me on December 15, 1927, complaining of pain in both ears for two days. He had been swimming four days before this in the municipal baths of this city.

On examination his right tympanic membrane appeared normal, but the left was deeply injected with all the normal landmarks obliterated. His temperature was 38·3° C. (101° F.) and he had a vomiting attack in my surgery. There was no mastoid pain or tenderness.

I advised an immediate left paracentesis. Despite the advice he postponed this for twenty-four hours, when he was admitted to a private hospital, his temperature still being 38·3° C. (101° F.) and this operation was performed. Very little pus was evacuated at the time of the operation. He was put on frequent aural irrigations and foments. The next day, December 17, his aural pain had gone, but his temperature was now 38·9° C. (102° F.). He had no headache, little or no aural discharge, still no mastoid pain or tenderness, but he was inclined to vomit and had one attack of dry retching. The same treatment as the previous day was continued. The next day, December 18, the temperature was 39·4° C. (103° F.), but otherwise his condition was the same as the previous day. The same treatment was continued. The next morning, December 19, his temperature was 40° C. (104° F.). His general condition was good. His only complaint was his tendency to vomit and at times to feel a little giddy. He now had absolutely no aural discharge or pain and still no mastoid pain, tenderness or œdema.

I got a physician to examine him and he reported no abnormality. There was therefore still nothing definite except the acutely inflamed ear of four days ago. Despite the absence of symptoms it was decided to explore the left mastoid process. Before doing this I had an X ray picture taken and the radiographer reported that the whole of the left mastoid process appeared quite blurry and that in his opinion the condition was an acute mastoiditis.

The operation was performed the same afternoon. As soon as the mastoid cortex had been removed with the gouge, pus began to well from the exposed mastoid cells. The whole process was found to be extensively diseased right down to the tip and the infection had also spread to the adjoining zygomatic cells. The ordinary Schwartze operation was performed. The *dura mater* of the middle fossa and the lateral sinus was exposed. It appeared normal. Two sutures were put in the upper end of the wound; the rest was left open and packed with iodoform gauze.

On the day following the operation, December 20, the patient's general condition was good, but temperature was still 40° C. (104° F.). I dressed the wound twice during the day, replacing the iodoform packing by gauze soaked in Wright's solution. The next morning the temperature was still the same, but towards evening had commenced to fall. Next morning it was normal and the discharge from the wound free.

From then, except for occasional small rises of temperature, the patient had an uninterrupted convalescence. His hearing is practically normal and the post auricular wound closed about March 12, 1928.

Comment.

The points of interest that strike me about this case are:

1. The absence of clinical symptoms suggesting mastoid involvement when the whole mastoid process was extensively diseased. There was practically no aural discharge after the paracentesis, although it definitely relieved his earache. There was never at any time mastoid pain, tenderness or œdema. In view of the above it made me naturally hesitate to operate.

2. From the day I saw him there was an increasing daily rise of temperature till at the time of operation it was 40° C. (104° F.). It is certainly unusual to get so high a temperature in an uncomplicated acute mastoiditis which was apparently all the condition was.

3. The extremely rapid necrosis of the whole mastoid process and adjoining zygomatic cells as a result, no doubt, of the expulsion of contaminated water, taken into the nose or throat, through the Eustachian tube into the middle ear. This happened, according to the history, while he was diving or swimming under water in the local baths.

Acknowledgement.

I am indebted to Dr. F. A. Hope Michôd for a general medical examination of the patient and for the administration of two anæsthetics, to Dr. W. N. Robertson who assisted at the operation, and to Dr. B. L. Clarke for the radiographic examination.

A CASE OF MESENTERIC CYST.

By R. B. Wade, M.D. (Sydney), F.C.S.A.,
Honorary Surgeon, Royal Alexandra Hospital for Children, Sydney,

AND

J. Steigrad, M.B., Ch.M. (Sydney),
Resident Medical Officer, Royal Alexandra Hospital for Children, Sydney.

A girl, B.H., aged three years, was admitted to the Royal Alexandra Hospital for Children on November 8, 1927, with a history of attacks of abdominal pain.

The father has pulmonary tuberculosis. The mother states that since birth the child had suffered from periodical attacks of abdominal pain and vomiting. There had never been any associated diarrhœa. The girl was always irritable, ate poorly, was constipated and did not thrive. Her abdomen was big and never varied in size.

On examination her temperature was 36·7° C. (98° F.) and the pulse rate was 136 in the minute. She was a thin, poorly nourished child, lay quietly in bed, her eyes were sunken, her tongue was clean and her abdomen distended. Dulness to percussion was absolute and did not move with posture. Resonance was present in the upper part of the abdomen only. A fluid thrill was present. Liver and spleen were not palpable. There were no enlarged glands in the neck, axillæ or groins. Other systems were clear. Von Pirquet test yielded no reaction.

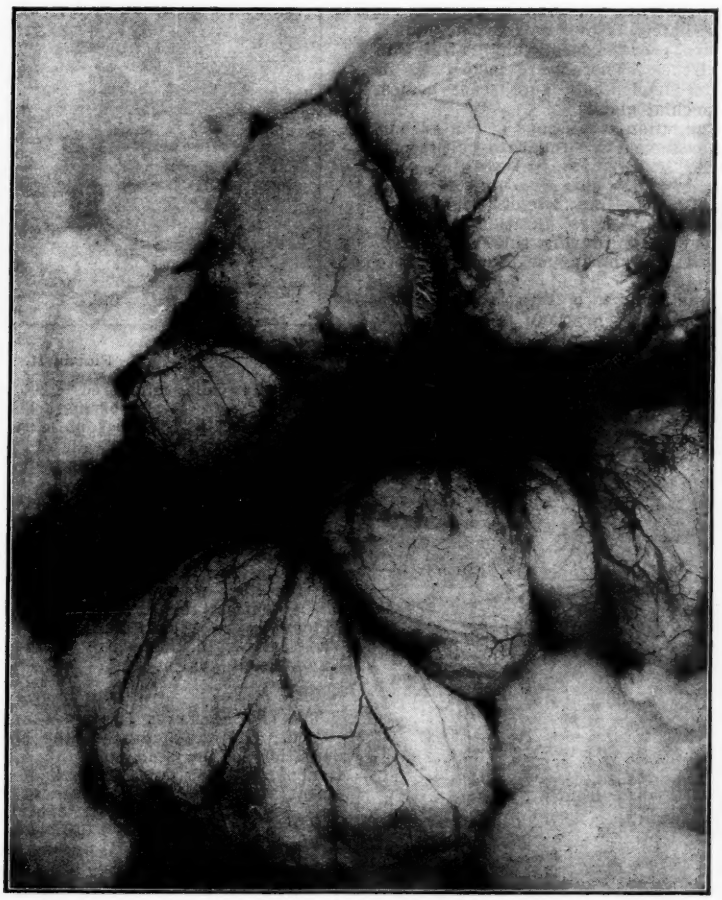

Illustration of specimen described by Dr. Wade and Dr. Steigrad. The dark shadow across the middle of the picture is the excised portion of small intestine, intimately adherent to the cyst.

At operation on November 10, 1927, the abdomen was opened and revealed a lobulated cyst about the size of a small football attached to the mesentery of the small bowel, about 45 centimetres (eighteen inches) from the ileo-caecal junction. The contents of the cyst consisted of a blood-stained fluid which gave the tumour a bluish red fleshy appearance, resembling, at the first glance, dilated large intestine. The small bowel appeared to curve in and around the cyst making separation very difficult. Therefore, about twenty-five centimetres (ten inches) of small intestine were resected with the cyst, the ends were closed and a lateral anastomosis was performed. The patient made an uneventful recovery and was discharged on December 3, 1927. She has been seen once since and her condition is much improved.

The following pathological report was made by Dr. Keith Inglis:

> On microscopical examination the wall of the cyst and septa between loculi show a lymphangiomatous structure with conspicuous blood vessels and strands of involuntary muscle in the connective tissue. No epithelial structures are to be seen. I think the cyst is of lymphatic origin and is akin to those that occur in the neck (*hygroma cysticum colli*).

CARCINOMA OF THE SMALL INTESTINE.

By M. P. Susman, M.B., Ch.M. (Sydney), F.R.C.S. (England),
Honorary Assistant Surgeon, South Sydney Hospital.

Case I.

E.G., a male, aged eighty years, was admitted to hospital six hours after complaining of pain in an old left inguinal hernia as well as in the abdomen. He had also a right inguinal hernia and both had hitherto been easily reducible. There was a large inguino-scrotal hernia on the left side, irreducible, tender and translucent at certain areas. The right hernia was easily reducible. He had vomited several times and his bowels had not acted for five days. The patient made light of this last symptom, saying that for years, he had had only one motion per week. The old man was mentally very bright and alert and gave his own history. Both legs were missing. He said that they had been amputated for gangrene two years previously. There was no distension, tenderness nor rigidity of the abdomen itself.

The preoperative diagnosis was a left strangulated inguinal hernia.

Operation.

The only anæsthetic used was a 1% solution of "Novocaine." The large hernial sac contained several ounces of blood-stained fluid and several coils of small gut. There was no constriction nor strangulation and the neck of the sac easily admitted three fingers, but I found a ring carcinoma in one of these loops. The corresponding mesenteric glands were enlarged. Resection and end-to-end anastomosis were done and the ordinary measures were taken for the cure of the hernia. The patient stood

the operation well, complaining only of faintness and sweating during the resection. He felt no pain.

The patient was discharged in good condition a month after operation, and was apparently quite well eight months later.

The accompanying illustration (Figure I) shows the condition found. According to the pathologist's report the growth was a spheroidal cell carcinoma and the glands show signs of a similar growth (see Figure II).

Case II.

H.C., housewife, aged forty-four years, was sent to hospital on account of frequent vomiting, loss of weight and weakness for several months.

On admission she had dyspnœa, œdema of the feet, icterus, enlarged liver, cardiac arrhythmia (*bruit de galop*) and signs of collapse of the lower lobe of the left lung. She died several days later.

Autopsy.

In the jejunum immediately below the duodeno-jejunal flexure was a malignant growth deeply infiltrating the gut and surrounding tissues. There were metastases in the adjacent mesenteric glands, both suprarenal bodies, left pleura and left bronchial glands.

On microscopical examination of sections of the growth and metastases adeno-carcinoma was found to be present.

Case III.

A.S., a female, aged fifty-one years, complained of great weakness and anæmia of many years' duration; she used to bleed and bruise very easily during this time. She was constipated, but had no vomiting or other digestive disturbance.

On examination she was found to be thin and pale, with slight icterus; the stools were dry and clay coloured. General systemic examination revealed no abnormality except for sore tongue, a hæmic murmur and mild fever.

On examination of the blood the red cells numbered 1,520,000 per cubic millimetre. Some anisocytosis and poikilocytosis were present, but there was no polychromatophilia. No erythroblasts or megalocytes were seen. The hæmoglobin value was 26%. The colour index was 0·8.

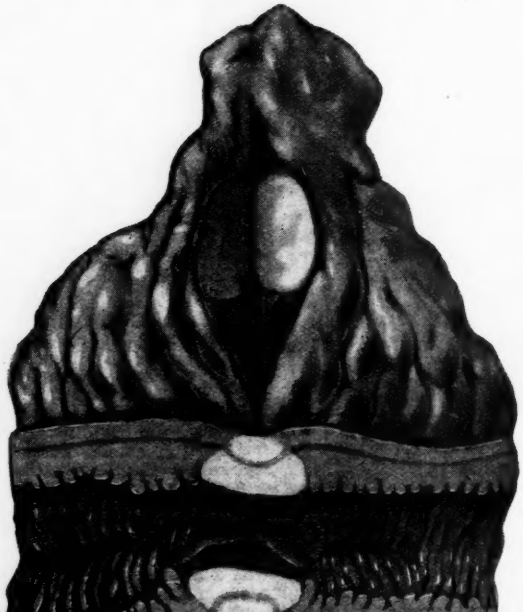

Figure I.

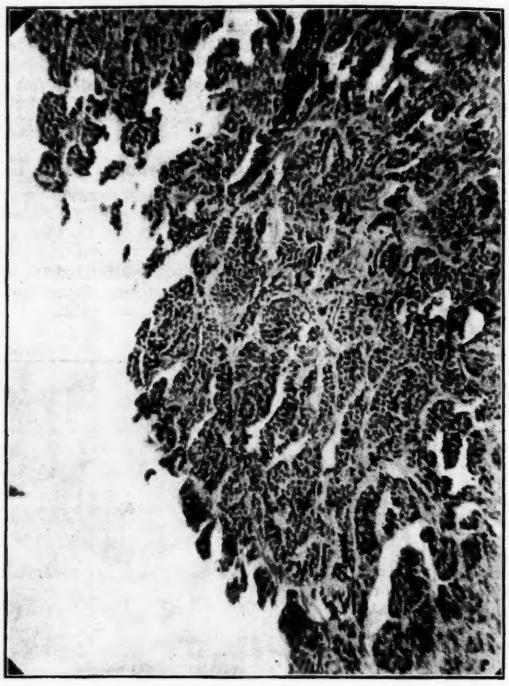

Figure II.

The white cells numbered 6,200 per cubic millimetre. Of these the polymorphonuclear cells were 70%; eosinophile cells, 1%; basophile cells, 1·5%; lymphocytes, 26%; and transitional cells 1·5%. No reaction was obtained to the Wassermann test.

Autopsy.

The stomach and the first and second parts of the duodenum were very dilated. There was an ulcerating growth in the third part of the duodenum considerably narrowing the lumen; the bile papilla was not involved, but the liver was slightly enlarged and olive-green from bile retention, the cause of which was not found. The kidneys were bile-stained, but were otherwise normal. The marrow in the centre of the femora was deep red. The spleen was normal.

Comment.

The chief features of Case I are: (i) The age of the patient, (ii) the finding of the growth in a hernial sac, operation having been undertaken for supposed strangulation of the gut; (iii) the lack of premonitory symptoms, constipation with maintenance of good health, being the only one; (iv) the whole operation was done with a local anæsthetic.

The patient in Case II was not seen till she was dying of widespread metastases.

Advanced anæmia was the most striking feature about the third case. There were no metastases.

Cancer of the small gut is rare, comprising only 3% of all intestinal carcinomata.[1] Up till 1919 there had been only twenty-two cases in the Mayo clinic.[2] At operation differential diagnosis must be made from a nodule secondary to cancer of some other organ and from syphilitic stricture, as in the two cases described recently by Perry.[3] Sarcoma and tuberculosis must also be considered. Some of the cases described as carcinomata are allied to the carcinoid tumour which appears as a nodule in the mucosa or submucosa of the appendix. It was described by Lubarsch[4] in 1888. Usually it remains small and innocent, with no tendency to metastasize or recur.

In Clarke's case[5] radiography localized the lesion. In two reported cases the cancer has occurred at the seat of

adhesions following previous operation.[6] [7] Recent papers on cancer of the small gut are those of Robb,[8] Wakeley,[9] Wolfer[10] and Clarke.[5] A large number of references is given by the last two.

References.

[1] J. Ewing: "Text-book of Neoplastic Diseases." 1922, page 662.

[2] E. S. Judd: "Carcinoma of the Small Intestine," *The Lancet*, 1919, Volume XXXIX, page 159.

[3] A. Perry: "Two Cases of Stricture of the Jejunum," *The Lancet*, January 29, 1926, page 128.

[4] O. Lubarsch: "*Über den primaren Krebs des Ileum nebst Bemerkungen über das gleich-zeitige Vorkommen von Krebs und Tuberkulose*," *Virchow's Archiv für pathologische Anatomie und Physiologie und für klinische Medizin, Band* CXI, *Seite* 280 (quoted by Wolfer).

[5] E. D. Clarke: "Carcinoma of the Small Intestine," *Surgery, Gynecology and Obstetrics*, December, 1926, page 757.

[6] Waldeyer: *Virchow's Archiv für pathologische Anatomie und Physiologie und für klinische Medizin, Band* LV; quoted by W. B. Ransom: "A Case of Primary Carcinoma of the Ileum," *The Lancet*, 1890, Volume II, page 1020.

[7] Birch-Hirschfeld: "*Lehrbuch der Pathologischen Anatomie*," page 918 (quoted by W. B. Ransom) (*loco citato*).

[8] J. H. Robb: "Carcinoma of the Ileum," *The British Journal of Surgery*, January, 1927, page 521.

[9] C. P. Wakeley: "A Rare Case of Intestinal Obstruction," *The British Journal of Surgery*, January, 1927, page 525.

[10] J. A. Wolfer: "Carcinoid Tumours of the Intestine," *Surgery, Gynecology and Obstetrics*, October, 1926, page 443.

THE OPERATIVE REMOVAL OF AN ACCESSORY VERTEBRA.

By Norman D. Royle, M.D. (Sydney), F.C.S.A.,
Honorary Orthopædic Surgeon, Lewisham Hospital; Honorary Orthopædic Surgeon, State Children's Relief Board, New South Wales.

Congenital scoliosis may be due to the occurrence of an accessory vertebra, usually wedge shaped. As long as the abnormality exists the deformity persists and the correct treatment is the early removal of the accessory vertebra. The following case is illustrative.

Clinical History.

The patient, female, aged two and a half years, had a very pronounced deformity. There were right thoracic and left lumbar curvatures and a great degree of kyphosis was also present. This deformity had been present since birth, but had been gradually getting worse. The X ray examination revealed an accessory hemi-vertebra between the first and second lumbar vertebra. An irregular type of ossification was found to be present throughout the vertebra.

The Operation.

As a method of treatment it was decided to remove the vertebra. It was approached through a vertical incision made over the lateral border of the lumbar dorsal fascia. The posterior compartment of this fascia was opened and the posterior layer was retracted medially together with the *sacro-spinalis* muscle and the tips of the transverse processes were sought beneath the muscle. There was a considerable degree of rotation and the accessory vertebra was identified by its position. It was found to have attached to it a small cartilagenous rib. It was only moderately firmly wedged between the second and third vertebra and was removed by careful dissection. The spinal ligaments were not attached to it. The adjacent surfaces of the second and third vertebræ presented cartilaginous articular facets against which the accessory hemi-vertebra rested.

Subsequent X ray examination revealed that the accessory half vertebra had been removed completely.

The Results.

There was an immediate improvement subsequent to the operation, though this report is too early to indicate what the full improvement will be. The child was two and a half years of age and a considerable degree of scoliosis had developed in that time. It is probable that the deformity would have been less had the vertebra been removed earlier.

Subsequent Treatment.

As soon as the child recovered from operation, an adjustable and removable celluloid jacket was applied to insure a continuous and progressive correction of the deformity.

NOTES OF THREE AUTOPSIES.

By Arthur Palmer, M.B., F.R.C.S. (Edinburgh),
The Government Medical Officer, Sydney.

It is possible to carry out many autopsies without meeting anything of unusual interest and then perhaps several unusual cases may come almost together. The following occurred in this way and seemed to me to be unusual and interesting enough to make them worth recording.

Case I.

E.K., a female child, aged one year and nine months, had not been robust. She was treated for a slight attack of bronchitis a month ago. About 12.30 p.m. on January 30, 1928, she ate some sausage and tomatoes; about 3 p.m. she vomited, became blue about the lips and was taken to a doctor, in whose surgery she died. Food poisoning was suggested.

At autopsy the pericardial sac appeared unusually prominent and contained a considerable quantity of clear yellow fluid. It was not noticed whether or not gas escaped when an opening was made into it. The lungs were very pale. The stomach contained some brownish fluid or mucus. At its cardiac end there was an oval chronic ulcer, measuring about 2·5 by 1·25 centimetres (one inch by half an inch) and surrounded by enlarged lymphatic glands. This ulcer had perforated into the pericardial sac and caused death, probably by escape of gas into the sac. That burns are a cause of gastric or duodenal ulcer is not accepted by some authorities; one authority states that it is only a fact for the student in his examination. In this patient the occurrence may have been only a coincidence, but the case is of interest from the age of the patient, the site of the ulcer and the cause of death.

Case II.

D.K.G., aged twenty-seven years, married, about two months pregnant, was admitted to hospital suffering apparently from *hyperemesis gravidarum* and after some weeks' treatment the uterus was emptied on January 12. She went out of hospital on February 2, but on February 3 became worse and on February 6 was admitted to another hospital "wandering in mind," with paresis of muscles of all the limbs and right side of face. Her tongue protruded to the right, knee jerks were absent, pupils were equal and reacted to light and accommodation. Incontinence of urine and fæces was present. The temperature was 36·8° C. (98·2° F.) to 38·9° C. (102° F.). She died on February 9.

At autopsy the head of the left caudate nucleus appeared enlarged and erosion was present; small hæmorrhages were found on its ventricular surface. Dr. Morgan, of the Department of Microbiology, reported that macroscopically an area of congestion and hæmorrhage was present on the surface of the left caudate nucleus. A small tumour

about three millimetres in diameter projected from the central part of this area. Examination of sections of the tumour revealed a papillary arrangement consisting of a delicate fibrillar stroma, containing blood vessels and covered by a layer of spheroidal cells of epithelial type. The growth was a papillary carcinoma. Presumably the growth, not the pregnancy, was the cause of her vomiting.

Case III.

L.M.T., a girl, aged nine years, was always in good health and enjoyed her evening meal. She went to bed about 8.30 p.m. in good spirits, but at 10.30 p.m. her parents were awakened by her screaming. They found her vomiting and sent for a doctor, who had her admitted to hospital at 2 a.m. in an unconscious condition. She died at 6.45 p.m.

At autopsy there was a large hæmorrhage of ordinary apoplectic type into the right cerebral hemisphere. The thymus weighed thirty-five grammes (one and a quarter ounces), the tonsils were much enlarged and much yellowish material could be expressed from them. The kidneys contained many small cysts.

Dr. Keith Inglis reported that on microscopical examination he could see nothing of special significance in the cerebrum to account for the hæmorrhage. Cysts were present in the kidney, but the appearances were different from those of congenital cystic kidney. The lining seemed to be endothelial. Dr. Inglis thought that they might be vascular, possibly lymphatic, seeing that they contained clear fluid (naked eye appearance) not blood.

A number of similar hæmorrhages in young people have been seen at the morgue during the last twenty years, but this, I think, was the youngest person. Osler and McCrae state that Holt had seen only one case of intracerebral hæmorrhage under the age of ten years. Most of the cases of intracranial hæmorrhage at that age are said to have been meningeal.

Reviews.

RHINOLOGY AND OTOLOGY.

It is pleasing to see that within three years a second edition of "Diseases of the Nose, Throat, and Ear for Practitioners and Students," edited by A. Logan Turner has been required and likewise it is satisfactory to note that the subject matter has been brought well up to date.

This book[1] was originally based on the small volume on the special subjects by Major W. G. Porter, D.S.O., F.R.C.S.E., who fell in the recent war, and it is dedicated to his memory. It "is produced as the joint work of those engaged in the teaching and practice of the speciality in the Edinburgh Medical School." From such a renowned school we expect a book of high quality and are not disappointed.

The sections on diseases of the ear, on tuberculosis of the larynx, and on pharyngeal conditions are particularly concise and good.

This edition has been improved by the introduction of the clinical anatomy of various regions, an addition which is to be strongly commended.

A further addition is to be noted in a detailed account of many of the minor and major operations. A section on endoscopy also has been added and there is an appendix of eleven pages of formulæ which will be found very useful.

Some of the chapters are so full as to suggest that eventually the writers may be persuaded to produce a comprehensive standard text-book on the speciality which in our opinion would rank with the best in the English language on these subjects.

Some criticism may be directed against the inclusion in this volume of detailed descriptions of highly technical operations. No one would expect the general practitioner to attempt West's operation of intra-nasal dacryocystostomy, an operation which requires high technical skill but which is in this volume freely illustrated. We might also criticize the absence here of any mention of the combined external and internal operation for dealing with dacryocystitis.

In the Edinburgh school the operation of inferior turbinotomy is commonly performed, whereas nasal surgeons in Australia at least are more inclined to treat the inferior turbinate bones with great conservatism.

Only a few adverse criticisms can be made against the volume.

It is questionable whether anything is to be gained by inserting illustrations in colours which are not natural and in this respect the volume could be improved. Likewise the reproduction of X ray negatives leaves much to be desired. Adenoid vegetations are said to occur more frequently in a cold, damp atmosphere, whereas in Australia we are inclined to consider that a hot, dry and dusty atmosphere is one of the biggest factors in the causation of this disease. Australians recognize that adenoid vegetations are all too prevalent.

Summing up it can be said that the volume is an excellent one and it can be confidently recommended to the general practitioner and to the student. The specialist also will find much pleasant reading in the volume, particularly in the section on diseases of the ear; this is only to be expected from J. S. Fraser.

[1] "Diseases of the Nose, Throat and Ear for Practitioners and Students," Edited by A. Logan Turner, M.D., LL.D., F.R.C.S.E., with the collaboration of various writers; Second Edition, Revised and Enlarged; 1927. Bristol: John Wright and Sons, Limited. Royal 8vo., pp. 464 with illustrations. Price: 20s. net.

THE FIRST PHYSICIAN IN HISTORY.

In his interesting book[1] on Imhotep, the vizier and physician of King Zoser, Dr. Jamieson B. Hurry introduces us to "the first figure of a physician to stand out clearly from the mists of antiquity" as Sir William Osler tells us.

To all medical men this life is therefore of great interest.

Imhotep was the vizier and physician of King Zoser and was so renowned for his skill in healing that he was eventually raised to be the deity of medicine.

Very little is known of his life. He was a very erudite and versatile man who took all knowledge for his province. His name Imhotep signifies "He who cometh in peace." Dr. Hurry divides his career into three periods: (i) Imhotep as contemporary of King Zoser, *circa* 2980 B.C., (ii) as medical demigod, *circa* 2850 B.C., (iii) as a full Deity of Medicine, *circa* 528 B.C.

Imhotep amongst his varied activities was a great architect and to him we owe the step pyramids of Sakkarah near Memphis and thus a physician was the builder of the earliest large stone structure known to history.

The great temple of Edfu is also associated with the name of Imhotep.

Imhotep enjoyed the reputation of being one of the greatest Egyptian sages and his proverbs were handed down from generation to generation. It may be permitted to quote one of his sayings which teaches the virtue of humility: "If thou be great, after being of none account, and have gotten riches after squalor, being foremost of those in the city then swathe not thine heart in thine own hoard for thou art become the steward of the endowments of the God."

Unfortunately we have no details of his work as a physician, but as he was later deified, obviously his reputation for medical skill must have been very great. The duration of his life is unknown to us, but we may look back with pride to the career of this our earliest known colleague to whom *nil humanum alienum erat*. Dr. Hurry closes his book with a short essay on ancient Egyptian medicine, which is full of interest.

The book throughout is well illustrated with photographs of statues of Imhotep and of the buildings which he planned and built.

[1] "Imhotep, the Vizier and Physician of King Zoser and Afterwards the Egyptian God of Medicine," by Jamieson B. Hurry, M.A., M.D.; 1926. Oxford University Press. Royal 8vo., pp. 134, with illustrations. Price: 7s. 6d. net.

The Medical Journal of Australia

SATURDAY, APRIL 14, 1928.

Cardio-Vascular Disease.

In *The British Medical Journal* of January 28, 1928, there is a short account of the scheme of the British Red Cross Society to establish in thickly populated centres throughout the country clinics for the treatment of rheumatism in adult sufferers. The idea had its origin in a growing recognition of the frequency of incapacity arising from what are known as the rheumatic diseases. A conference was held in March, 1927, of representatives of the British Medical Association and of industrial workers and at this conference the subject of industrial rheumatism was discussed. The opinion appears to be widely held that the establishment of clinics at which bath and vapour treatment, physical therapeutic measures, heat, light and ultra-violet radiation and electrical treatment are applied, will lead to the elimination of rheumatic affections. It will be noted that the committee of the British Red Cross Society which has been charged with the institution of the first of the clinics in London, comprises some prominent medical practitioners and some men eminent in other walks of life. The physical treatment of those painful, incapacitating and crippling conditions commonly spoken of as rheumatism will without doubt result in the partial or complete restoration to activity of many workers. Whether it will cure any of the affected persons is a different matter. It is difficult to understand how these remedies applied to persons in adult life will have any effect in preventing the occurrence of the diseases.

Recent statistics have demonstrated that while the death rate from tuberculosis has diminished, the mortality from diseases of the heart and vessels now occupies the first place. The Bertillon system tends to obscure the position in regard to the cardio-vascular diseases. Reference to this subject has been made in these columns during the past ten years and more. It is unnecessary to labour the point. According to the figures given in the last edition of "Australian Demography" there were 7,692 deaths from organic diseases of the heart, 943 from diseases of the arteries, 142 from embolism and thrombosis and 86 from disease of the veins and lymphatic system in the Commonwealth in the year 1926. To these diseases must be added cerebral hæmorrhage, chronic nephritis, some cirrhotic conditions of the liver and various other affections depending primarily on pathological changes of the arteries, arterioles or other vessels. From the point of view of prophylaxis, it is essential to seek causes rather than the location of the lesions and in this respect the British Red Cross committee has undoubtedly moved in the right direction. According to present day teaching the most potent factor in the production of cardio-vascular lesions is acute rheumatism. Unfortunately the term rheumatism seems to cover a great many infections of varying kind. Rheumatic fever may be regarded as an acute specific infection caused by a definite virus. Although the evidence is not conclusive, it is advisable for the present purpose to accept the streptococcus described by Poynton and Paine and almost simultaneously by Meyer and Meltzer as the causal organism of this affection. That the myocardium and the endocardium are frequently involved in the infective process is certain. It is a disease that attacks children and young adults and in consequence mass prophylactic measures must be adopted to protect the very young. It would seem that the causal organism is a frequent inhabitant of the fauces of apparently healthy persons. While ubiquity of a virus can no longer be regarded as an indication of the futility of the attempt to eliminate the source of infection, it is evident that the prevention of a disease caused by an organism that is widely spread, must include an attack on the susceptibility of the individual and a supervision of those who harbour the virus. Much work must be conducted in order to fill the gaps in our knowledge concerning the ætiology and immunology of acute rheumatism. The amount of disability and death caused by this disease justifies the appointment of a special committee or commission to ascertain the nature of the infection and

to discover the best practical measures for its control in children.

Closely associated with acute rheumatism is the complication of scarlatina, commonly known as scarlatinal rheumatism. Similar affections of the joints, endocardium and myocardium occur as sequelæ or direct results of other micrococcal infections. The relationship of these affections to true rheumatism should be investigated.

Chronic infections of a rheumatic type are less well understood. In any endeavour to bring clarity into the confused picture, the first step must be to discover the differential characters of a chronic infection resulting from a true acute rheumatism and of a chronic infection in a subject who has not previously had rheumatic fever. There is a great deal of evidence that many focal infections give rise to implication of joints, muscles, nerves and the cardio-vascular system. It would seem that non-rheumatic arthritis and myositis are but rarely associated with a myocarditis. It is useless in any campaign aiming at the prevention of what is known as industrial rheumatism to focus the main attention to the treatment of joint and muscle deformities. The infection is acquired long before the crippling becomes manifest. The public holds that damp and cold are causes of these chronic affections, but it can be shown that these factors merely act in emphasizing their existence. That there are numerous bacterial causes would seem to be established. What is needed is a thorough search into the beginnings of these infections, in order that prophylactic measures may be applied betimes.

There are many other matters which must be studied and traced to their ultimate sources before the prevention of so-called rheumatism, true rheumatism and cardio-vascular disease enters into the sphere of practical medicine. The matter is national and for this reason the investigation should be undertaken by a working commission appointed by the Commonwealth Department of Health. We would urge that short cuts are useless in this problem. It may be tempting to assume that these affections are the results of focal infections and that all that is needed is a campaign of wholesale removal of tonsils, teeth, adenoid vegetations and other foci of bacteria. The goal will be reached only by following the indicating finger of painstaking research. This may be a slow process, but it is reliable.

Current Comment.

THE EPIDERMIS.

There are no blood vessels in the epidermis. The relationship of the blood vessels of the dermis to the epidermis is so close, however, that they are regarded as the source of nourishment received by the latter. The matter appears quite simple—blood is brought by the capillaries of the papillary layer, plasma passes through their walls between the endothelial cells and so through the basal layer into the intercellular spaces of the epidermis. The epidermis is not the dull uninteresting layer of identical cells which it would appear to be. It is capable of undergoing hypertrophy and pathological change and its abnormal manifestations have been the occasion of much divergence of opinion. Readers will remember the important work of Dawson on the melanomata which was discussed in this journal in February, 1926, in conjunction with some observations by Smith and Darier on the same subject. In November of last year also reference was made to an investigation by Becker into the distribution of pigment in the skin and mucous membranes of the body. In both these discussions interest centred largely around the large, branching, dendrite-like cells which are found in the epidermis and which have to do with the pigment in this layer. These cells play a prominent part in another investigation which has been made by L. M. Pautrier into what he calls dermo-epidermic interchanges.[1] Pautrier does not deny the importance of the circulation of the plasma, but he has sought to prove that there exists in addition a special trophic system connecting the epithelium with the vital fluids, in other words an intercellular dermo-epidermic circulation. He has used three reagents in his investigations: (i) the silver reduction of melanin by Masson's technique collated with Bloch's "Dopa" reaction, (ii) the staining of the fats and esters of cholesterol in xanthoma with scarlet R and (iii) the staining of the ferric pigment (hæmosiderin) in Schamberg's disease with potassium ferrocyanide and muriatic acid.

By means of Masson's method the melanin pigment in the skin is seen chiefly in the basal cells, but a linear row of melanin granules can be seen here and there either between the cells of the *rete malpighii* or extending under the basal layer. Pautrier found that in good specimens these rows were seen to be protoplasmic tendrils dotted with

[1] *Archives of Dermatology and Syphilology*, January, 1928.

melanin granules, originating in peculiar cells with angular bodies situated in the *stratum germanitivum*. These cells are the Langerhans cells, the "dendritic" cells of Becker. They send out numerous processes from their angles; some of these spread out and insinuate themselves between the malpighian cells; others extend along the basal layer for some distance and then turn and ascend vertically toward the surface. Every Langerhans cell thus distributes pigment to a group of malpighian cells. It will be remembered that Bloch holds that the formation of melanin is the result of interaction within the cells of an enzyme, an oxydase and a mother substance brought to the cell. Pautrier accepts this view and in accordance with it he interprets his histological observations as showing that the Langerhans cells are the seat of two currents of pigmentary substances, one of which runs from the derma towards the epidermis, a chromogenous current and the other from the epidermis toward and into the dermis, a pigment carrying current.

The second method used by Pautrier was the use of scarlet R stain in three cases of xanthoma. It is interesting to note in passing that these three cases of xanthoma occurred in the one family. The three patients had *xanthoma tuberosum* with xanthomatous infiltration of tendon sheaths and juxta-articular regions. There was also present a definite hyperlipocholesterinæmia, the figures varying between 6·668 and 7·865 grammes per thousand cubic centimetres. The fatty acids ranged from 8·47 to 9·60 grammes per thousand cubic centimetres. With scarlet R stain it is possible to show the presence of fats containing the esters of cholesterol. The xanthomatous tumours were seen to be built up of xanthelasmic cells after extending into the epidermis. The xanthomatous cells formed perivascular coats around the small and medium sized vessels, coalescing here and there into large xanthomatous masses. In frozen sections all the cells were seen to contain lipoid staining substances to such a degree that their structure was obscured by it. Small definite fatty drops existed in the protoplasm of various endothelial cells. Analagous droplets existed in some cells of the epithelium covering the tumour and the fat was intracellular. Here and there a Langerhans cell was seen drawing through its processes fat from a xanthomatous cell. It was found here as with the melanin pigment that the fat was distributed to the malpighian cells with which the Langerhans cell was connected by fibrils. The fats stained by the scarlet R stain were always strictly intracellular and never scattered in the connective tissue. Pautrier claims that these observations prove in its entirety the anatomical continuity of the tropho-pigmentary network.

The third method of investigation carried out by Pautrier was in a case of Schamberg's disease, a progressive pigmentary disease characterized by the appearance of brown spots on the extremities. In this condition, as in xanthoma, brown pigment granules were found that looked like protoplasmic fibrils. These fibrils were connected here and there with a polygonal cell which was filled with the same granules and the nucleus of which stood out sharply through the condensation of chromatin of the surrounding basal cells. These polygonal cells had numerous highly ramifying processes extending in every direction. All the filaments filled with pigment granules, appeared to be processes of the polygonal cells. The polygonal cells were identified as being cells of the Langerhans type. Pautrier discusses the question of the nature of the pigment in Schamberg's disease. It is not really part of the present discussion, but on account of its bearing on melanogenesis may be included. He states that the majority of authors regard the pigment as being melanin. It fails, however, to give the reaction usually obtained with the silver stain in Masson's technique. He holds that it is hæmosiderin and discusses the possible methods of its isolation. Other writers have held this view. The interesting point is that the circulation of fat in xanthoma which extends into the epidermis, does not appear to be incompatible with normal melanogenesis—the Langerhans cell is able to hold fat and melanin at the same time. The presence of hæmosiderin, on the other hand, evidently hinders the process of melanogenesis.

Pautrier holds that he has established the existence of an intracellular and intercellular circulation linking the epithelium with the media through a network of cells united in a common function. This network has previously been held to exist by Borrel and by Masson. Pautrier believes that this network is part of the reticulo-endothelial system, the tropho-melanic system is the peripheral expansion of the reticulo-endothelial system.

The work of Pautrier must be regarded as of the first importance and as likely to have far reaching effects. From the physiological point of view his observations do not exclude the old view of the intercellular filtration of the blood plasma in the epidermis. In fact he mentions his findings as having to do with a special trophic system in addition to the circulation of the plasma. It is in connexion with his claim that he has described a peripheral extension of the reticulo-endothelial system that important questions arise. In the first place the reticulo-endothelial system is essentially mesodermal in origin. If the views of Pautrier be accepted, then the work of Dawson on melanotic sarcomata will need revision, for the latter has advanced arguments based on sound observation that the melanotic sarcomata are epithelial in origin. The other alternative is that the reticulo-endothelial system can have an extension which is epithelial. Other factors which require further investigation are the specificity of the "Dopa" reaction of Bloch and the possibility of the occurrence of desmoplasia, that is that an epithelial cell may become a connective tissue cell and function as one. Pautrier's work has been carried out on pathological conditions, if it were possible to make observations of a similar nature on normal tissues, progress might be made by verifying his interesting hypothesis.

Abstracts from Current Medical Literature.

RADIOLOGY.

Bone Tumours.

E. L. Jenkinson (*Radiology*, December, 1927) contributes a paper on the X ray diagnosis of bone tumours. The radiologist should try to establish the presence or absence of bone invasion in all tumours. If this can be established, the lesion is malignant, if not, it is usually benign. Infections near a joint are prone to extend into the joint and often pass through it. Cartilage offers little resistance to infections. In malignant disease the cartilage serves as an efficient barrier and this point is of value in differentiation between the two conditions. Small bone striæ extending outward, perpendicular to the bone are characteristic of periosteal sarcoma. Secondary tumours are usually osteoclastic with little new bone formation. Carcinoma of the prostate and scirrhous cancer of the breast give rise to osteoblastic types of metastases. Secondary tumours most often occur near the nutrient vessels. Benign tumours usually are single and occur near the end of the diaphysis. Exostoses are usually due to an anomaly of the temporary cartilage and cause symptoms only by pressure and deformity. They are bone producers and not invaders. Exostoses and chondromata are common in persons who had rickets in childhood. Bone cysts are medullary in origin and are slow growing. Pathological fracture is common. They expand, but do not invade the cortex.

Pulmonary Osteoarthropathy.

R. S. Paterson (*British Journal of Radiology*, December, 1927) refers to pulmonary osteoarthropathy. Hypertrophic changes in bones as a concomitant of pulmonary disease have frequently been reported. The two most common changes are bulbous swelling of the ends of the fingers and toes (clubbing) and periosteal hypertrophy with subperiosteal deposits of irregular new bone. The former condition is confined to the soft tissues, while all the long bones are liable to be affected in the latter. The carpus, tarsus, pelvis, clavicle, scapula and skull are rarely involved. The condition occurs in chronic pulmonary disease when the lung circulation is impaired. The finger clubbing is due to hyperæmia of the vessels and fibrous thickening of the subcutaneous tissues. The long bone changes are probably due to a passive hyperæmia from the restricted pulmonary circulation or to a toxæmia from the primary lesion. The periosteal changes involve the large bones and apparently do not affect the terminal phalanges. Joints and articular surfaces are unaffected. There is usually found an irregular subperiosteal deposition of new bone and many separate regions may be involved. The Wassermann test will serve to exclude syphilis. In a case reported by the author, a mediastinal neoplasm was demonstrated with pressure on the phrenic nerve. The condition improved temporarily after deep therapy, but later recurred.

Lumbo-sacral Spinal Variations.

E. H. Skinner writes on the anatomical and postural variations of the lumbo-sacral region of the spine (*Radiology*, December, 1927). The lumbo-sacral area is a transitional area, that is, the fifth lumbar vertebra may partake of the nature of a sacral segment (and *vice versa*) in 10% of cases. Failure in union of the neural arches of the last lumbar and first sacral vertebræ is found in 20% of cases (*spina bifida occulta*). Most individuals have a spinal curvature (scoliosis); this is particularly common in hard workers and most of the spur formation of the bodies is probably due to stress and strain rather than to chronic infections. These changes limit motion. Sacralization of the fifth lumbar vertebra is found in 10% of individuals and varies in degree. Separate centres of ossification may occur in the lumbar transverse processes, leading to supernumerary ribs; these are frequently misinterpreted as fractures and rarely cause symptoms.

"Lipiodol" in Pneumography.

D. C. Smyth and L. R. A. Schall contribute a paper on the use of "Lipiodol" in the diagnosis of pulmonary lesions (*Boston Medical and Surgical Journal*, November 17, 1927). This method of examination is quite safe if patients are properly selected. Tuberculous patients should not be examined by the bronchoscope nor should they be tested with "Lipiodol." The authors find the method of little use in the presence of abscesses. All pus should be cleansed from the larger bronchi of the affected lung by suction and the main bronchus is located by the pus exuding from it and the warmed "Lipiodol" is introduced; usually fifteen cubic centimetres of "Lipiodol" are used. The patient is then put into such a posture that the oil will flow into the affected area. Rarely can a lung abscess be demonstrated by this method as it rarely communicates with a bronchus. Bronchiectasis can be easily demonstrated, while bronchial stenosis can also be demonstrated. The authors consider bronchoscopy essential and they place little reliance on any other methods of introducing "Lipiodol" into the lung. Bismuth subcarbonate powder is probably superior to "Lipiodol" in the demonstration of stenosis of a bronchus and in the presence of a foreign body.

Physostigmine in Gastric Radiology.

M. Ritvo and S. Weiss (*American Journal of Roentgenology*, October, 1927) report some experiences in the use of physostigmine in gastro-intestinal examinations. In extensive gastric lesions peristaltic waves will pass along the area of stomach in question, whereas in intrinsic lesions the waves will be broken or arrested on reaching the pathological area. Gastric and duodenal spasms cause confusion and may be due to gastro-duodenal lesions or occur as a reflex from other abdominal lesions. Therefore, a drug which increases tone and peristalsis and which eliminates spasm, is of value. Atropine is only partly successful, while massage is fleeting and cannot be used in patients with spastic abdominal muscles. Physostigmine salicylate was given by mouth in doses of 2·6 milligrammes and subcutaneously in doses of 2·6 to 2·0 milligrammes. When given subcutaneously the drug caused colic. When the drug is given orally, the action on tone and peristalsis is striking and prolonged. If the effect is insufficient, the dosage may be repeated after an interval of half an hour. If cramp or colic occurs, atropine may be given as an antidote.

X Rays and Cancer Diagnosis.

J. M. W. Morison (*British Journal of Radiology*, November, 1927) sketches briefly the rôle of X rays in aiding in the diagnosis of cancer. Lung cancer may be primary in the lung or secondary to a malignant growth elsewhere. Primary lesions may originate in a bronchus and constitute about 90% of primary lung cancers. Lung collapse from bronchial block may occur and the growth rapidly extends and pleural involvement leads to an effusion. The commonest site is near the hilum. Primary lesions, originating in lung tissue, nearly always occur in the upper lobe and may involve the whole lobe. It is unusual for the growth to displace the heart. The lower margin of these lesions is usually sharply defined. syphilis must be excluded by the usual tests. Secondary cancer is usually nodular in appearance, the nodules are scattered through both lungs, are usually larger towards the bases and generally appear first in this situation. Diffuse secondary malignant disease spreads usually from the base and frequently resembles an effusion. Secondary mediastinal tumours are common and are demonstrable on the screen, but they are very difficult to differentiate from aneurysm. In oesophageal malignant disease there is usually a well-defined obstruction with some of the meal passing through an irregular tortuous channel and with dilatation of the œsophagus above the level of the stricture. Cardiospasm and diverticula may cause difficulty in differential diagnosis. Cancer of the stomach produces a filling defect owing to encroachment of the growth into the stomach lumen. The recumbent position is necessary in examination for lesions of the cardia. Cessation of the peristaltic wave is a valuable sign pointing to early gastric involvement. The opaque enema is necessary for the proper investigation of bowel lesions. Bone cancer is usually

secondary and the first sign is spontaneous fracture; there is little tendency to form new bone at the site of the fracture.

PHYSICAL THERAPY.

Radiological Treatment of Intracranial Tumours.

H. K. PANCOAST (*American Journal of Roentgenology and Radium Therapy*, January, 1928) summarizes the radiological treatment of one hundred and thirty-six patients with intracranial tumours over a period of thirteen years. Of the extra-sellar tumours statistics are available only in the cerebellar group. Radiation was tried in forty-eight cases. Twenty-five of the patients are known to be alive for a period varying from a few months to fourteen years. The first requisite for adequate treatment is exact operative localization. When the tumour is not localizable the patient can still be treated, but at a distinct disadvantage. Uniformity of irradiation technique is absolutely essential, but does not exist at the present time, the treatment being carried out in a more or less haphazard manner. The radiosensitivity of different types of tumours must be determined before it is possible to reach a decision as to any favourable attempt at irradiation or before any attempt can be made to prognosticate results. This will be possible only through close cooperation of radiologists, neurological surgeons and neuro-pathologists. It is to be noted that there is absence of favourable response by angiomata and neuromata, but in the case of gliomata varying results have been found. Some of those involving the orbit have been destroyed only by a caustic dose of radium. In every case a return was noted, probably from an extension along a portion of the nerve which did not receive the caustic dose. The most important step to be taken before treatment is an examination of the histological characters of the tumour. As the malignancy varies with these, accurate prognostication is impossible unless they are determined.

Conception Following Castration Radiation.

M. BOLLAFFIO (*Strahlentherapie*, 1927, *Band* XXIII) describes a case of uninjured fœtal development on conception during the latent period following castration irradiation. The patient suffered from typical post-encephalitic *paralysis agitans* and on the recommendation of a nerve specialist it was decided to produce castration. A Röntgen castration was performed with a symmetry apparatus using 170 kilovolts, three milliampères filtered through zinc 0·7 millimetre in thickness for twenty minutes. The exposures were given anteriorly and posteriorly over a field twenty centimetres by fifteen centimetres with a focal skin distance of thirty centimetres. Under these conditions a skin erythema dose was delivered in thirty-three minutes and the dose applied to the patient was two-thirds of the skin erythema dose per field. It was calculated that the ovaries in this case received 37% to 40% of the skin erythema dose. The patient resumed married life on the eighteenth day after treatment, five days later a normal period set in. After this there was complete amenorrhœa, signs of pregnancy appeared and the patient's condition appeared satisfactory. She was allowed to come to term with a perfectly normal child. Following parturition another menstruation occurred, although the patient did not suckle the infant. Since then menstruation had been absent. Apparently a specially irradiated follicle had burst, the irradiated ovum was fertilized and by virtue of an apparently undisturbed development it must be concluded that it had remained undamaged.

Hyperæmia and the Action of X Rays.

WALTER WYUEN (*Strahlentherapie, Band* XIII, 1927) has observed the influence of hyperæmia in a tissue on the effects of X rays. When diathermy was used to produce the hyperæmia 30% to 40% less Röntgen energy was required to produce erythema than in the non-hyperæmic skin. The application to the diathermatized area caused a pronounced œdema and a tense infiltration of the skin which with further diathermy increased for fourteen days and then gradually subsided. This effect is independent of the temperature and nature of the current and can in fact be produced after hyperæmia induced by hot air. Congestion of the tissues as a result of stasis produces an exactly similar effect. The effect of sympathectomy followed by large doses of irradiation was tried, one limb being subjected to sympathectomy and both being irradiated. It was found that the congested limb manifested milder symptoms of Röntgen ulcer and more rapid recovery. The inference is that a generous blood supply tends to prevent permanent Röntgen injury. An experimental attempt to produce the converse yielded no result.

Unipolar and Bipolar Currents in the Treatment of Skin Blemishes.

A. E. SCHILLER (*Archives of Physical Therapy, X Ray and Radium*, November, 1927) emphasizes the superiority of the unipolar over the bipolar current treatment of skin blemishes. The higher milliampèrage of the latter leads to more skin destruction and scarring than the lower milliampèrage of the former. The same consideration holds good in treating mucosal lesions, for example, leucoplasia and urethral warts. His technique consists of thorough cleaning with green soap and water because of the danger of using any spirituous solution when sparking is likely to occur. A fine spark from a needle is controlled by a foot switch and is held at a distance of from several millimetres to several centimetres from the lesion on which a shower of sparks is discharged alternatively. The patient may be placed on an autocondensation couch connected with the Oudin current which is discharged by means of a pointed applicator. For fine work such as that on the cornea where the scarring must be a minimum, this method is ideal. The fingers of one hand are placed on the area to act as a rheostat; some fingers are raised when more spark is required and they are replaced when less spark is needed. The crust which forms immediately after treatment, must remain in place until it falls off.

Radiation Treatment of Bronchial Asthma.

HARRY B. WILMER (*Archives of Physical Therapy, X Ray and Radium*, January, 1928) discusses the use of infra-red radiation and ultra-violet light in the treatment of bronchial asthma. His personal experience shows that in the thermal and chemical type the rays can be used only as an adjuvant to the usual desensitization methods. But as in all these cases there is a secondary bacterial protein sensitivity, great benefit is derived. In the neurotic type of asthma the rôle played by the rays is very pronounced, as these patients are of a highly neurotic type, having vasomotor changes probably endocrine in origin. Treatment may need to be long continued, but will almost certainly produce great relief. In the pollen type of asthma the results of the use of pollen extract in desensitizing the patient were so good that the rays were not used. In the animal epidermal and food protein type where there was a definite bacterial type of asthma engrafted on the original lesion, the rays were of great benefit. But it was in the bacterial type that the greatest relief was produced. This was so pronounced that it became a routine in the clinic to institute radiation treatment if a patient's asthma did not clear up or show definite signs of improvement following three or four weeks of "bacterin" treatment. When the asthma is due to mediastinal growths, no benefit can be derived, except in children whose mediastinal gland alone is enlarged. Here cures have been experienced. When the attacks are due to definite fibrotic changes in the lungs, it has been found that the sputum becomes more easily expectorated and a feeling of relief is given after radiation, although no definite improvement in a pathological condition follows. When a cardiac decompensation is the source of the asthmatic attacks relief is quickly given. Pain is relieved and the reestablishment of the circulation hastened. The majority of the patients treated with radiation had already been subjected to different methods of treatment. In opposition to the general view that the calcium content of the blood is lowered in many cases of asthma, the author's experience in two hundred estimations was that he had seen only six patients with low blood calcium and sixteen with high blood calcium concentration.

British Medical Association News.

SCIENTIFIC.

THE ANNUAL MEETING OF THE SECTION OF OBSTETRICS AND GYNÆCOLOGY OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Medical Society Hall, Melbourne, on February 29, 1928. DR. E. A. SPOWERS was in the chair.

Election of Office-Bearers.

The following office-bearers for 1928 were elected:

President: Dr. Allen Robertson.

Members of Committee: Dr. A. N. McArthur, Dr. R. W. Chambers, Dr. Robert Fowler.

Honorary Secretary: Dr. Edward R. White.

Honorary Treasurer: Dr. P. G. Brett.

Recorder of Proceedings: Dr. Hubert Jacobs.

Puerperal Sepsis.

DR. I. V. YOFFA read a paper entitled: "Puerperal Sepsis—an Investigation Abroad on the Prevention of Maternal Mortality" (see page 450).

DR. B. MILNE SUTHERLAND after thanking Dr. Yoffa for his paper, stated that it was the most comprehensive and the most enlightened he had heard in the Section.

Dr. Sutherland remarked on the great power exerted generally by the medical profession on the Continent and also referred to the varying social and economic conditions of the peoples in foreign countries. He was of the opinion that the teaching of obstetrics in England had made considerable advance, particularly at Saint Thomas's and University College Hospitals. Dr. Sutherland referred to the dogmatic statements of those employing certain methods of "cure" mentioned by Dr. Yoffa and considered that the very multiplicity of these showed that no definite method of cure had yet been achieved. There was no doubt, however, that the intensity of the work carried out in the investigation of puerperal sepsis had gripped the whole world.

Dr. Sutherland traced the development of the extern department of The Women's Hospital, Melbourne, and stressed its great value in the teaching of obstetrics to the medical student. He also emphasized the present unsatisfactory conditions where the student worked under the direction of the midwife.

Dr. Sutherland had seen Potter, of Buffalo, deliver three *primiparæ* women by his method which upset all his views previously held concerning breech delivery. Potter had used surgical anæsthesia and had taken eighteen minutes, twenty-two minutes and ten minutes with each case respectively; there had been no cervical or perineal lacerations. Potter had shown him the charts of thirty of his patients and not one had manifested morbidity. Potter stressed the importance of "ironing out" the vagina before delivery and considered the most important predisposing causes of infection were fatigue, loss of blood and lowered resistance. Another important step in Potter's technique was the flexing of the arms across the chest immediately following the rupturing of the membranes; in this way extension of the arms did not occur.

DR. A. M. WILSON stated his appreciation of Dr. Yoffa's paper and mentioned the improved conditions for the students at the Women's Hospital, but remarked that the proportion of teaching in obstetrics was not yet equal to that in medicine and surgery.

Dr. Wilson dealt with mortality statistics and the manner of their compilation, showing how false conclusions could be obtained, especially so by the general public. Dr. Wilson thought that if many such deaths as those due to extrauterine pregnancy *et cetera* were excluded, the mortality rate would closely approach 3‰ births. Dr. Wilson advanced the idea that the death rate ran a parallel curve to the number of confinements attended by doctors.

DR. R. MARSHALL ALLAN concluded that there existed a general tendency abroad to have all obstetric practice controlled by a Ministry of Health but that in Victoria, conditions were not yet favourable for this. Dr. Allan also thought that there was a suggestion to allow midwives to conduct all normal cases. He then referred to the International Classification of Diseases and the question of compilation of statistics and stated that in his opinion the Dutch figures were 60% under-estimated. Dr. Allan also showed how the figures for Victoria and New South Wales were at variance owing to the different basis of compilation in each State, especially in regard to inclusion of deaths from criminal abortion. In conclusion Dr. Allan considered that local conditions would play an important part in efforts to combat maternal mortality and also in determining accurate statistics.

DR. J. LEON JONA was most pessimistic about the alteration of social conditions in Australia, because the people did not have the "Teutonic mind" and so reforms could not be "ordered." Even in Holland the conditions of living were much different from those in Australia.

Dr. Jona was enthusiastic about the method described by Remington Hobbs for treating and draining the infected uterus, although he did not consider it to be satisfactory in every case. Dr. Jona favoured the extension of the Continental system of clinics to Australia and was of the opinion that the conduct of maternity practice on the Continent helped the patient.

DR. EDWARD R. WHITE, after thanking Dr. Yoffa, remarked on the vastness of the subject dealt with and referred to a previous paper on this subject read by himself.

Dr. White emphasized the importance of good nursing and hygiene in puerperal infections and stated he was not a strong advocate of mercurochrome soluble 220 for septic conditions as thirty cubic centimetres of a 1% solution could not possibly sterilize the blood stream. Dr. White thought, however, that smaller doses might raise the patient's resistance, the action being analagous to protein shock therapy. Dr. White always preferred to use blood transfusion and lately had used the method of immuno-transfusion of Leonard Colebrook. Dr. White considered that by citrating blood, a high percentage of leucocytes might be lost and mentioned the methods of injecting donors with nuclein and arsenical compounds to increase the leucocytes available. The possibility of alterations in the virulence of pathogenic and non-pathogenic streptococci was briefly referred to by Dr. White who then proceeded to deal with the treatment of puerperal peritonitis. Dr. White adopted conservative methods in the pelvic type, but if general peritonitis were present, he opened the abdomen irrespective of the patient's condition. Dr. White considered Hobbs's method very useful in cases of chronic peritonitis and chronic metritis. The seasonal incidence of puerperal infection was referred to and Dr. White, concluding, expressed surprise at the almost constant absence of pus from the cavity of the uterus when he had taken material for cultures from puerperal infection patients.

DR. LUCY BRYCE stated she had not succeeded in transforming green streptococci into the hæmolytic variety *in vitro*.

Salpingograms.

DR. E. A. SPOWERS demonstrated salpingograms taken after uterine injections of "Lipiodol," briefly mentioning the histories of the patients.

Malaria During the Puerperium.

Dr. Spowers also showed the chart of a patient who had a malarial attack during the puerperium. The patient had previously suffered from malaria.

Tubal Abortion.

Dr. Spowers related the history of a patient who had been admitted to a medical ward with a diagnosis of diaphragmatic pleurisy and who was shortly afterwards operated on. At the operation he had found a tubal pregnancy in each tube and both were terminating as tubal abortions. The patient was a single girl, aged nineteen years, whose conjunctivæ were definitely icteric and the diagnosis had presented many difficulties.

Superfœtation.

Dr. H. Flecker demonstrated skiagrams taken in a rare case of superfœtation previously described by him. One fœtus had been estimated to be eight and a half weeks and the centres for clavicles, mandible, ribs and femurs could be seen. The second fœtus had been estimated to be sixteen and a half weeks and the development of the long bones (diaphyses) was clearly shown, also the vertebræ and the commencing formation of the membrane bones.

A meeting of the South-western (Country) Subdivision of the Victorian Branch of the British Medical Association was held at Warrnambool on March 3, 1928.

Motions of Condolence.

Motions of condolence with the relatives of the late John Chalmers Baird, of Mortlake, of Hewlett Breton, of Terang, of Samuel Connor, of Coleraine, and of Robert Oliver Douglas, of Hamilton, were passed. The question of a memorial to the late Robert Oliver Douglas was discussed and it was decided to consider the possibility of securing the publication of his work on cerebro-spinal meningitis.

Papers and Demonstrations.

Dr. F. E. Littlewood (Warrnambool) read a paper on the relation of the liver to bile pigment formation and excretion which was fully discussed.

Dr. H. I. Holmes presented several patients. Three had been treated by diathermy for malignant disease; one was suffering from polycythæmia with enlargement of both kidneys, liver and spleen of six years' duration; one patient had Raynaud's disease of twenty years' duration and one had peritonitis, followed by intestinal obstruction, lateral ileostomy, anastomosis and later resection of ileum for the fistula.

Dr. J. H. Henderson demonstrated a patient with ascites and hydrothorax of unknown causation, the cavities had been frequently tapped.

ANNUAL MEETING.

The adjourned annual meeting of the Tasmanian Branch of the British Medical Association was held at the Royal Society's Rooms, Hobart, on March 24, 1928, Dr. D. H. E. Lines in the chair.

Election of Office-Bearers.

It was announced that the following office-bearers had been elected for the ensuing year:

President: Dr. D. H. E. Lines.

President-Elect: Dr. G. E. Clemons.

Vice-President: Dr. J. A. Newell.

Members of Council: Dr. W. W. Giblin, Dr. T. C. Butler, Dr. A. W. Shugg, Dr. F. Fay, Dr. S. Gibson.

Honorary Treasurer: Dr. E. A. Rogers.

Honorary Secretary: Dr. J. H. B. Walch.

NOMINATIONS AND ELECTIONS.

The undermentioned have been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Wallace, Kenneth Stewart, M.B., Ch.M., 1926 (Univ. Sydney), c.o. F. J. Kirby, Esquire, 12, Spofforth Street, Cremorne.

Chenhall, Frederick Nicholas, M.B., B.S., 1927 (Univ. Sydney), University Club, Sydney.

Ashby, Gilbert Waters, M.B., Ch.M., 1924 (Univ. Sydney), 417, Forest Road, Penshurst.

Blackall, Moya Kathleen, M.B., B.S., 1927 (Univ. Sydney), Killard, Queanbeyan.

Eppel, David, L. *et* L.M., 1922, R.C.P., L. *et* L.M., 1922, R.C.S.I., Silva Street, Bondi.

Correspondence.

CHRISTIAN SCIENCE.

Sir: In your issue of February the article "Mind Healing," by John Bostock, M.B., B.S., contains a reference to Christian Science and its founder which is apt to convey a wrong impression on account of the statement: "Mrs. Eddy . . . . borrowing the ideas of Phineas Parkhurst Quimby founded the Christian Science Church."

Christian Scientists appreciate the generosity of the doctor when he says that the medical profession has something to learn from Christian Science. In attributing the genesis of Christian Science to Quimby, however, the doctor is merely quoting statements that have been amply disproved time and time again, even to the extent of legal disproof.

In April, 1883, in the United States circuit court in Boston, legal proceedings were instituted by Mrs. Eddy to protect her copyright. The defendant answered that the works in dispute were not original with her, but had been copied from Dr. P. P. Quimby's manuscripts. On being asked to present evidence in support of the statement, counsel for defendant stated in substance: "There is no evidence to present." An injunction with costs was granted against the defendant and the infringing books were destroyed. See "Miscellaneous Writings," by Mary Baker Eddy, pages 380 to 381.

It would be strange, only that history supplies an endless list of examples, how that every new idea has been subjected to misunderstanding and misrepresentation, and Christian Science and its founder, Mary Baker Eddy, have been subjected to more than their share. In her book, "Science and Health with Key to the Scriptures," the textbook of Christian Science, Mrs. Eddy, speaking of the origin of Christian Science, says on page 126: "I have set forth Christian Science and its application to the treatment of disease just as I have discovered them. I have found nothing in ancient or in modern systems on which to found my own, except the teachings and demonstrations of our great Master and the lives of prophets and Apostles. The Bible has been my only authority, I have had no other guide in 'the straight and narrow way' of Truth."

Christian Scientists accept this statement of their leader in regard to the authorship of Christian Science unreservedly, for they know that it would be impossible for the Christian Science Church to do the healing and regenerating work that it is doing, if it were founded on dishonesty, as is implied in the story of the Quimby origin.

Yours, etc.,

Joseph F. Turner.

Christian Science Committee on Publication for New South Wales, 310 George Street, Sydney.

March 8, 1928.

[The suggestion that Christian Science is founded on dishonesty is not supported by the medical profession. Rather is the view held that it is based on untenable hypothesis and conceived without the critical aspect which is so essential in scientific work.—Editor.]

SNAKE BITE.

Sir: In The Medical Journal of Australia of March 10 Dr. Stewart McKay publishes an interesting table enumerating the active principles contained in the poisons of certain venomous snakes, ticks and spiders and also refers to the fundamental experiment of C. J. Martin, who demonstrated that the immediate application of a tight tourniquet to the limb of a rabbit for a period of twenty minutes converted as much as six lethal doses of either tiger or black snake venom into a non-lethal injection.

On the analogy of snake bite and also because neurotoxins and hæmolysins occur in both snake and spider venoms, Dr. McKay advocates the adoption of ligature in

bites by poisonous spiders. While I quite agree that further clinical and experimental observations on the efficacy of ligature in spider bite may be advisable, the immediate point at issue concerns the validity of the reasons advanced by Dr. McKay for advocating this particular therapeutic procedure as far as poisonous snakes and spiders are concerned.

In Martin's later work on the Australian colubrines he showed that the good results obtained by ligature were dependent on the content of the venom in thrombase and that where thrombase was present, immediate stoppage of the circulation to the part by local ligature resulted in a solid coagulation of the blood and lymph in the vicinity of the injection or bite with localization and probable destruction of the poison *in situ*. On the other hand, when the thrombase had been destroyed by exposure to a temperature of 75° C., ligature ceased to exert the same beneficial action. After the injection of heated venom the application of a tourniquet merely prolonged the death time, the more thermostable neurotoxin exerting its lethal action as soon as removal of the ligature permitted its absorption into the general circulation.

Beneficial effects follow early ligature in the case of all the vipers as well as in those Australian colubrines whose venoms have been investigated. Their venoms all contain thrombase. In all other colubrines, however, thrombase is absent and practical experience has shown that once a lethal dose has been injected into the tissues, ligature is no longer a life saving procedure. All it does is to prolong the interval during which specific antivenines can be administered successfully, a fact thoroughly appreciated by the medical profession in India when treating patients suffering from bites by the cobra, the venom of which contains both neurotoxin and hæmolysin, but no thrombase.

In the case of any given snake the content of its venom in thrombase is the important factor determining the effectiveness of ligature, yet in Dr. McKay's correspondence on red-backed spider bite as well as in that occurring in the columns of The Medical Journal of Australia last year on snake bite, the fundamental importance of this fibrin ferment appears to have been entirely overlooked.

Yours, etc.,

N. Hamilton Fairley.

The Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne.
March 19, 1928.

ADVERTISING.

Sir: As one who flirted furiously with that jade Journalism before being married to Madam Medicine, I would ask permission to support very heartily the remarks of your correspondent "Common Sense" on the question of advertising.

There is, as he says, an extraordinary amount of sheer nonsense talked by some of our colleagues about the duties of the press. The press exists for the purpose of giving news to the people, quite regardless of the laws and wishes of any one trade or profession. If it is "news" that Dr. X, of Woop Woop, intends to take a trip to London, then any "news" paper is perfectly within its rights in drawing attention to the fact. If on the other hand, Dr. X, of Woop Woop, is not of sufficient importance or public interest to have his movements chronicled, it is quite obviously wrong of him to send paragraphs to papers concerning himself. A lady reporter sees too well-known people at the theatre, the one a barrister and the other a surgeon. Why have we the slightest right to demand that she withhold the name of the medical man when she hands her copy to the editor?

I have yet to be convinced that whilst it is a perfectly correct thing for a newspaper to feature and photograph the leading K.C. of a big lawsuit, it is a hideous and unrighteous sin for the same paper to mention and photograph the medical attendant of the Governor-General (for instance). Of course, it is open to abuse, but a few years in medical practice convinces the more cynical of our members that the real objection to press mention comes more burningly from the unmentioned and the unphotographed.

As your correspondent points out, it would do us all a lot of good to see ourselves as others see us. The English members of our honoured profession have advanced a good deal farther than we have in the matter of press education and public health lectures. One does not agree with all that Arbuthnot Lane says and does, but it must be remembered that he has a great many of the most distinguished members of our profession behind him. What our profession don't seem to realize is that an unsigned unofficial medical article carries as little weight with the general public as it does with us. The aforesaid public in Australia receives its medical education from people of the scientific calibre of Mr. Doan, Mr. De Witt and Mother Seigel. There is nothing to counterbalance this source of information or correct its inaccuracies, except unsigned medical articles spasmodically printed in various daily and weekly journals.

As a beginning, why not have a properly instituted committee who should appoint one or two people with the necessary power of putting the official O.K. on all press matter submitted to him or them? It would perhaps need to be a full time job, but it would be the means of giving the Australian public authoritative education in matters medical. I, as a medical man who writes medical articles for the press under a *nom de plume*, would be perfectly willing and eager to submit my copy to such a committee merely for the added value of the O.K. received from it. The only stipulation necessary would be that the official concerned must be available at any time of the day for immediate reference. Press news, sad and regrettable as the fact may be, is often cold and useless after twenty-four hours.

At the present moment we have in New South Wales as Minister for Health a medical man. He, by virtue of his position, is able to give valuable health hints to the public without risking a charge of "infamous conduct in a professional respect." It seems almost a tragedy to me that such hints have had to await attention till such time as a pure coincidence renders them officially and professionally available. One realizes the abuses and undesirability of certain aspects of medical press work. On the other hand, one feels very acutely that we as a profession have a primary duty to the public in the matter of giving them information about their health which they can obtain from no other source. It seems a pure case of the lesser of two evils. On the one hand we have the safeguarding of the ethics of our profession, on the other we have the health of the general public. It is for us to choose. I trust that we shall not lag too far behind the medical men of England and America in the realization of our responsibilities.

With apologies for this somewhat lengthy letter.

Yours, etc.,

"Medical Journalist."

THE TREATMENT OF DIABETES.

Sir: May I be permitted to answer several criticisms that your reviewer has made in connexion with certain dietetic *régimes* advocated by the Baker Institute pamphlet, "An Outline of the Practice in Treatment of the Diabetic Clinic of the Alfred Hospital."

The reviewer objects to the starvation *régime* for patients in the middle-age group on the following grounds: (i) "Resulting danger of acidosis which is very real in an out-patient clinic"; (ii) "That many patients regard this method of cure as worse than the disease."

(i) Some months ago the Medical Superintendent of the Alfred Hospital approached me with the request that I should draw out a diabetic scheme embodying some standard diets. This, it was hoped, would facilitate the work of the residents in treating diabetic ward cases. About the same time a request was received for a diabetic contribution to a post-graduate meeting. Accordingly the diabetic pamphlet was prepared to meet both of these ends.

The diabetic clinic, through the courtesy of the medical staff, has facilities for both out- and in-patient treatment of patients. No mention whatsoever was made in the pamphlet of initiating a starvation *régime* on an out-patient. Why your reviewer assumes that we should depart from the well established practice of keeping starvation patients in bed and under observation I am at a loss to understand.

Again, this group is referred to as the "middle age group." I would like to insist upon the inclusion of the words "without acidosis." To those who have treated several diabetic cases the recognition of the middle-aged individual without acidosis is a common experience. MacLean, in *The Lancet* of August 6, 1927 (page 280), calls attention to this group and regards them as being of a mild nature. In the treatment of many such cases by the starvation *régime* we have never had any trouble due to the development of acidosis. Undoubtedly it is unwise, if not dangerous, to starve the diabetic individual of any but this group, but we feel confident that these individuals without acidosis may be safely starved.

(ii) "The fact is that many patients regard this method of cure as worse than the disease." Without wishing to be pedantic, I would like to point out that all of our patients have impressed upon them the fact that we cannot cure them, but provided they adhere strictly to instructions, the disease can be kept completely under control. The diabetic patient who will not cooperate and put up with some personal discomfort, such as this *régime* insists on, is not likely to yield satisfactory results either for himself or the medical practitioner.

Again, your reviewer objects to the starvation *régime* as being unsuitable for "thin patients." Most individuals of the glycosuric group without acidosis are not of the thin type. I would again like to insist that even with thin or obese individuals of this group, despite the theoretical figures quoted in your review for the latter individuals, no fear of acidosis should be felt. It must, however, be remembered that the scheme outlined is purely an arbitrary one, which we, at the Alfred Hospital, have found to be practicable. Occasions will certainly arise where borderline cases are encountered and in these the practitioner will have to exercise his own judgement.

I cannot help feeling that a printer's error is present in the second last paragraph of your review. A patient weighing 150 kilograms is considered (150 kilograms = 23·5 stone). The *régime* would certainly need a little modification for such a patient.

Yours, etc.,
Basil Corkill, M.B., B.S.

The Thomas Baker, Alice Baker and Eleanor Shaw Medical Research Institute, Alfred Hospital, Prahran, Melbourne.
March 20, 1928.

THE RECTUM IN PREGNANCY.

Sir: It is interesting in humankind how readily we overlook the obvious; we think of witches and goblins and all manner of strange superstitions before we regard the reason that lies apparent under our noses.

One source of sepsis in obstetrics may fairly be said to be under our noses, yet not one textbook of the art with which I am acquainted, seems aware of its potentiality for ill. We are obsessed with wonderful and multitudinous methods for cleaning the hands and the person, cleaning everywhere in fact but this region. Wandering on the heights accompanied by caps and gowns and gloves, I myself was brought to earth suddenly by a case of femoral phlebitis whose origin, so far as I could make out, was an inflamed pile. From the pile my thoughts travelled to the rectum.

The rectum is a sewer containing much or little of fæcal matter, this fæcal matter contains a flora of whose virulence no man can prophesy. The rectum lies within the pelvis subject to stress and strain during labour—it is stretched, it is crushed, the opposing surfaces of its mucous membrane are forcibly rubbed against each other, contained particles may be gripped as in a vise. Abrasions must be of constant occurrence during labour, especially if gritty bodies, derived from fruit seeds and the like, are present within its lumen. Given, therefore, sufficiently virulent organisms or what amounts to the same thing, a low resistance, and there must be infection. Even without an appreciable local reaction, as we all know, organisms can make their way into the lymphatics or the veins through a small break in the continuity of a protecting tissue, in this case the mucous membrane. So, I think, many infections of the uterus and adnexæ, as well as general infections, may take place (embolism and so forth).

These considerations have so worked upon my spirit that I rest uneasily unless my obstetrical patients carry out the following directions:

1. The woman gives up food likely to produce a gritty residue three weeks before the expected confinement.

2. At the same time, food likely to favour the growth of pathogenic organisms in the bowel is cut down or avoided altogether.

3. Milk and such things as finely ground nuts are added to her diet if she does not already use them.

4. I have it in mind to recommend the use of lactic acid producing organisms, but do not know where to obtain a satisfactory strain.

5. Two weeks before the expected labour the bowel is washed out with saline solution and every morning thereafter.

6. The day following labour the bowel is again washed out with saline and half a pint of permanganate solution introduced. The permanganate is repeated in the evening and the wash-out permanganate on the two succeeding days.

Yours, etc.,
W. P. Kelly, F.R.C.S.I.

Musgrave Road, Red Hill,
Brisbane.
Undated.

Post-Graduate Work.

A COURSE IN RADIOTHERAPY.

The Cancer Research Committee of the University of Sydney announces that arrangements are being made for the holding of a post-graduate course in radium and X ray therapy. The Commonwealth Department of Health has consented to lend the services of Dr. Burrows, who has had much experience with radium in England. A course of ten clinical demonstrations will be given at the Royal Prince Alfred Hospital in June of this year.

A preliminary course of lectures on the physics of radium and X rays will probably be organized by the staff of the Department of Physics of the University of Sydney to commence toward the end of April. There will also be a series of lectures and demonstrations on the principles and technique of X ray therapy.

The full details of the course will be announced at a later date. The fee for the course will be approximately twelve guineas. It will be open to all medical graduates.

Medical Prizes.

THE SIDNEY RAWSON WILSON PRIZE.

An announcement has been made in the *British Journal of Anæsthesia* that the Sidney Rawson Wilson Prize will be awarded for the best research work on inhalation anæsthesia which is carried out by a citizen of the British Empire between January and December 1, 1928. The

prize is a sum of fifty pounds. Every competitor is expected to conform to the following regulations:

1. To forward to the Secretary of the *British Journal of Anæsthesia*, Balatine Road, Withington, Manchester, England, on or before the first day of December, 1928, a typewritten report of his or her work in triplicate with a *nom de plume* thereon and also accompanying same a sealed envelope having the same *nom de plume* inscribed on the outside and his or her name and address within.
2. All competitors assign to the *British Journal of Anæsthesia* all rights of publication.
3. The *British Journal of Anæsthesia* reserves the right to decide if any effort received is of a sufficiently high grade to warrant the award.

Obituary.

JAMES PETER FITZSIMMONS.

WE regret to announce the death of Dr. James Peter Fitzsimmons which occurred at Condoblin, New South Wales, on April 4, 1928.

EGBERT JOHN CONNELL.

WE announce with regret the death of Dr. Egbert John Connell which occurred at Warrnambool, Victoria, on April 4, 1928.

ALBERT GEORGE MEARES.

WE regret to announce the death of Dr. Albert George Meares, of Hopetoun Road, Malvern, Victoria.

Books Received.

MENTAL DISORDERS: A HANDBOOK FOR STUDENTS AND PRACTITIONERS, by Hubert J. Norman, M.B., Ch.B. (Edinburgh), D.P.H. (Edinburgh and Glasgow); 1928. London: E. and S. Livingstone. Crown 8vo., pp. 478, with illustrations. Price: 14s. net.

A HANDBOOK OF HISTOLOGY, by A. McL. Watson, M.A., Ph.D.; 1928. London: E. and S. Livingstone. Crown 8vo., pp. 218, with illustrations. Price: 8s. 6d. net.

THE MATRIX OF THE MIND, by Frederic Wood Jones and Stanley D. Porteus; 1928. Honolulu: University Press Association. Royal 8vo., pp. 457, with illustrations.

Diary for the Month.

APRIL 16.—New South Wales Branch, B.M.A.: Organization and Science Committee.
APRIL 17.—Tasmanian Branch, B.M.A.: Council.
APRIL 17.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
APRIL 18.—Western Australian Branch, B.M.A.: Branch.
APRIL 18.—Central Northern Medical Association, New South Wales.
APRIL 24.—New South Wales Branch, B.M.A.: Medical Politics Committee.
APRIL 25.—Victorian Branch, B.M.A. Council.
APRIL 26.—New South Wales Branch, B.M.A.: Branch.
APRIL 26.—South Australian Branch, B.M.A.: Branch.
APRIL 27.—Queensland Branch, B.M.A.: Council.
MAY 1.—Tasmanian Branch, B.M.A.: Council.
MAY 2.—Victorian Branch, B.M.A.: Branch.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

COMMONWEALTH OF AUSTRALIA: Government Medical Officer, Nauru.
PUBLIC SERVICE OF SOUTH AUSTRALIA: Deputy Director.
ROCKHAMPTON HOSPITALS BOARD: Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

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